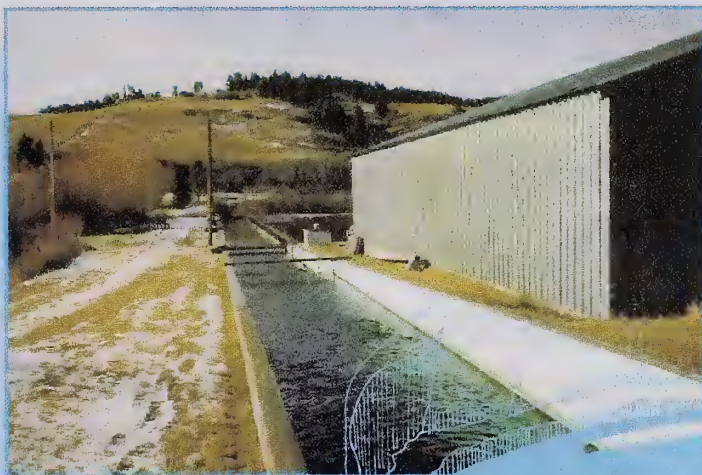


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water supply Big
Springs Trout
Hatchery, A/E #97-

Secure Water Supply Big Springs Trout Hatchery

Fergus County, Montana
A/E #97-35-01



Prepared For:
Montana Department
of Fish, Wildlife, & Parks



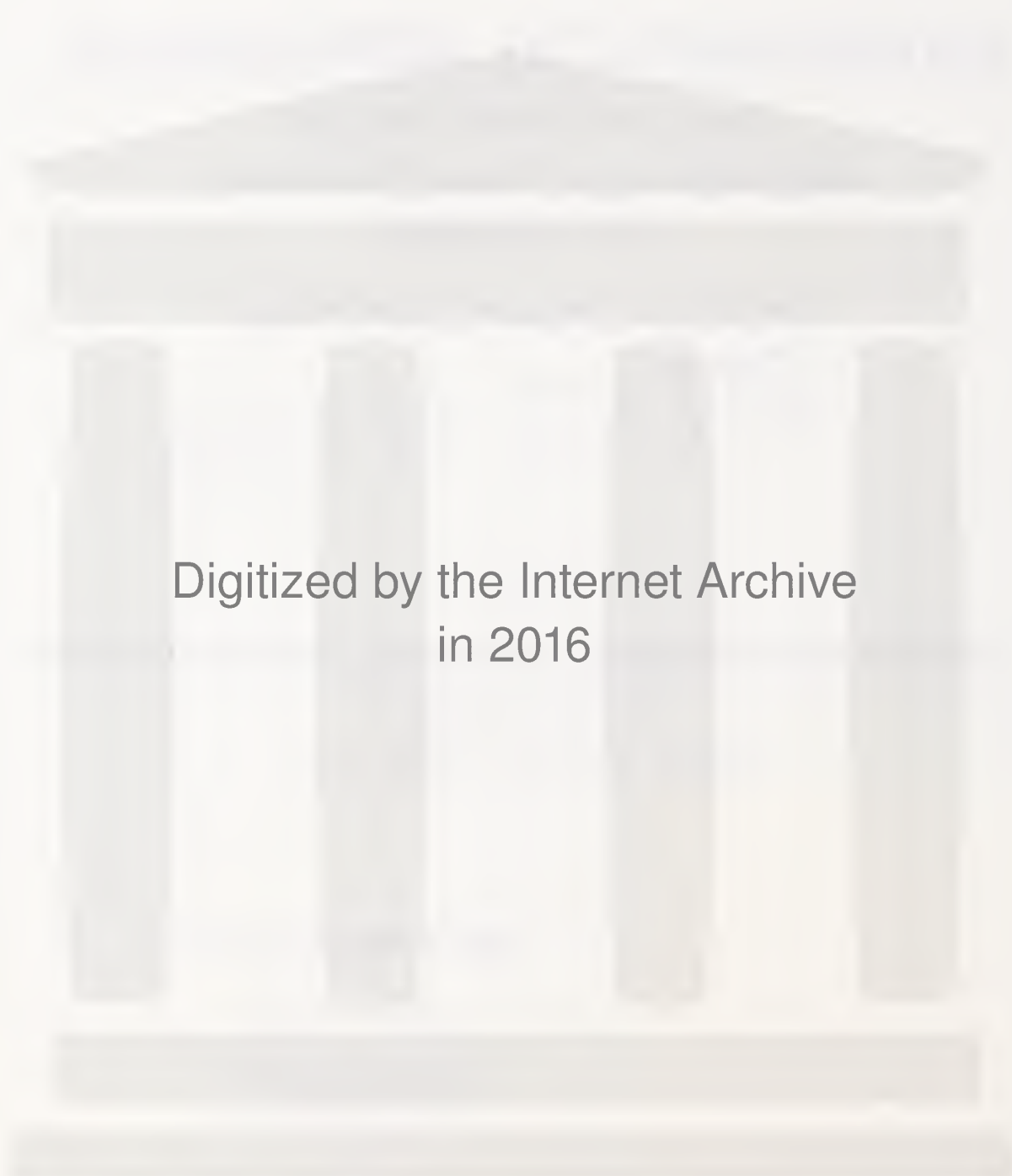
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Under the *Montana Environmental Policy Act (MEPA)*, is an Environmental Impact Statement (EIS) needed for the proposed action? No.

Due to the scope and nature of this project, it will not have a significant impact upon the human environment, and the preparation of an EIS under *MEPA* is not required.

DEPARTMENT OF FISH, WILDLIFE AND PARKS
1420 E 6th Ave, PO Box 200701 Helena, MT 59620-0701
(406) 444 -2535

ENVIRONMENTAL ASSESSMENT

Project Title Secure Water Supply for Big Springs Trout Hatchery
(Lewistown, MT); A/E Project #97-35-01

Division/Bureau Fisheries/Hatcheries

Program Hatcheries

Description of Project See PART 3.0 on page 3-1

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ON ATTACHED PAGES
1. Terrestrial & aquatic life and habitats			X			5-8 thru 5-11
2. Water quality, quantity & distribution			X			5-4 thru 5-8
3. Geology & soil quality, stability & moisture				X		
4. Vegetative cover, quantity & quality			X			5-11, 5-12
5. Aesthetics			X			5-15
6. Air quality				X		
7. Unique, endangered, fragile, or limited environmental resources			X			5-8 thru 5-12
8. Demands on environmental resources of land, water, air, energy			X			
9. Historical & archaeological sites			X			5-13, 5-14

POTENTIAL IMPACT ON HUMAN ENVIRONMENT

	MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ON ATTACHED PAGES
1. Social structures & mores				X		5-4
2. Cultural uniqueness & diversity				X		
3. Local & state tax base & tax revenue				X		5-3
4. Agricultural or industrial production				X		5-2
5. Human health				X		5-14
6. Quantity & distribution of community & personal income				X		5-2, 5-3
7. Access to & quality of recreational and wilderness activities				X		5-15
8. Quantity & distribution of employment			X			5-3
9. Distribution & density of population & housing				X		5-2, 5-3
10. Demands for government services				X		5-4
11. Industrial & commercial activity				X		
12. Demands for energy			X			5-4
13. Locally adopted environmental plans & goals				X		5-2
14. Traffic networks & traffic flows				X		

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Department of Environmental Quality; Montana Department of Natural Resources and Conservation; U.S. Army Corps of Engineers; Fergus County

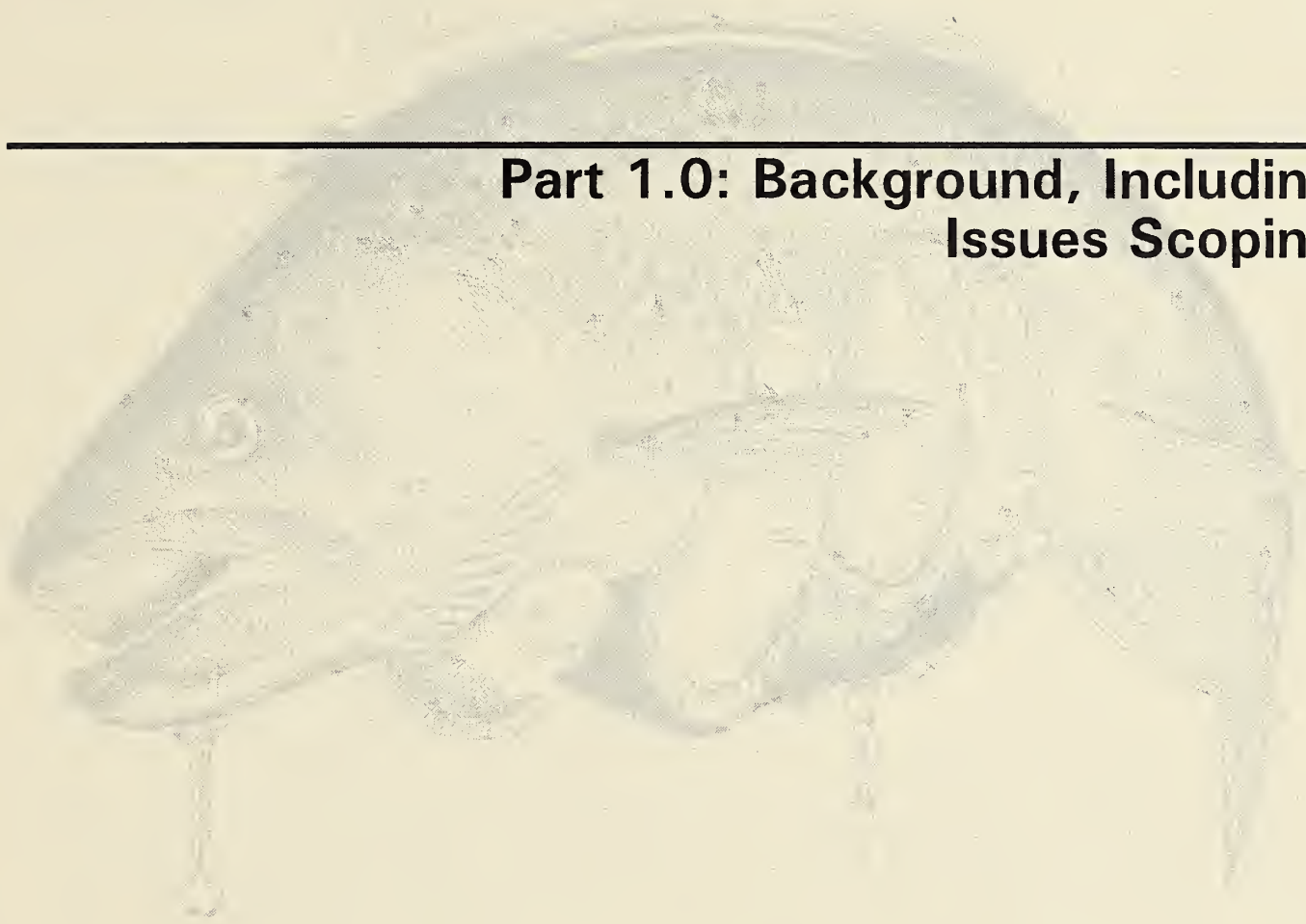
Individuals or groups contributing to this EA: Jack Boyce, Hatchery Manager at Big Springs Trout Hatchery; Montana Natural Resource Information System

Recommendation concerning preparation of EIS: The impacts of this proposed action are minor and do not warrant the preparation of an EIS.

EA prepared by : Robert Peccia & Associates, Inc.
 P.O. Box 5653
 Helena, Montana 59604
 Daniel M. Norderud, AICP -- Principal Author

Date: 5-8-98

Part 1.0: Background, Including Issues Scoping



PART 1.0: Background, Including Issue Scoping

1.1 Introduction

This Environmental Assessment (EA) examines a proposal by the Montana Department of Fish, Wildlife & Parks (FWP) to construct a project to protect the water supply at the Big Spring Trout Hatchery from infection by whirling disease. To better understand this proposed project and the decisions that must be made by FWP, this Part provides a brief overview of the hatchery's location and development, the threat of whirling disease, applicable federal and state environmental laws, requirements for EA documents, and other issues relevant to the project.

Part 2.0 of the EA explains the purpose and need for undertaking the proposed work and offers background information on whirling disease in Montana. Part 3.0 contains a detailed description of the type of work proposed and lists what decisions must be made by FWP. Part 4.0 discusses alternatives considered and the preferred action for the project. Part 5.0 provides background information about environmental resources in the project area and contains an analysis of the potential effects of the proposed project on such resources. Finally, Part 6.0 summarizes efforts by the FWP to coordinate the project with federal, state, and local agencies and the public.

1.2 Project Location

The Big Spring Trout Hatchery, which consists of upper and lower hatchery complexes, is located about 6.5 miles southeast of Lewistown in Fergus County. The hatchery can be accessed by traveling southeast from the community on Montana Secondary Highways 238 and 466.

FIGURE 1-1 shows the location of the hatchery in Montana and its general location within Fergus County.

1.3 Development of the Big Spring Trout Hatchery

In 1896, the U.S. Bureau of Fisheries established the first federal fish hatchery in Montana on Bridger Creek near Bozeman. State efforts toward fish culture were initiated about the same time when the State Board of Fish and Game Commissioners recommended the establishment of a state fish hatchery. In 1907, the Anaconda State Fish Hatchery became Montana's first state-owned hatchery. A second hatchery was soon constructed near Somers after legislative approval for the facility was received in 1911. By 1926, the Montana Department of Fish and Game was operating 14 hatcheries across the state. Today, the FWP operates nine fish hatcheries, including the Big Spring Trout Hatchery.

The initial step in the development of the Big Spring Trout Hatchery occurred in 1907 when the City of Lewistown purchased the land surrounding the Big Spring. Efforts to establish a hatchery at this site began in earnest in 1921 when the City granted a 99-year lease to the State of Montana for the SW $\frac{1}{4}$ NE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 5, Township-14-North, Range-19-East. The following year, the State decided to establish a fish hatchery on the property. The site was chosen because

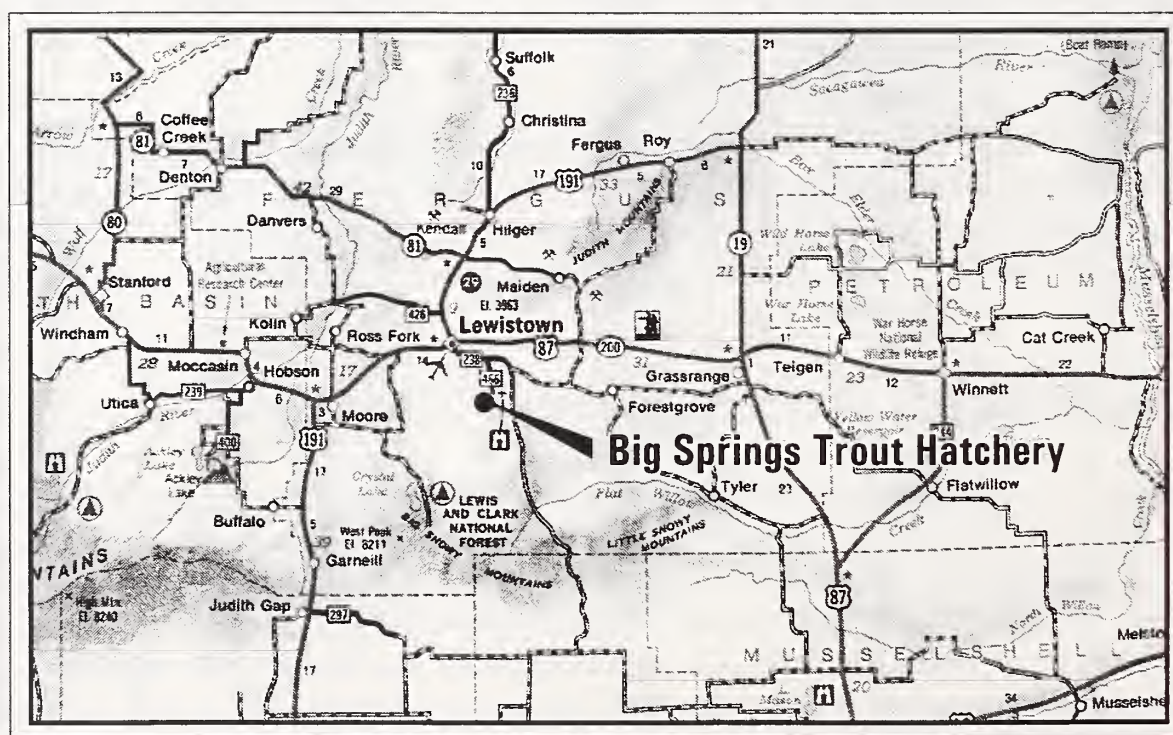
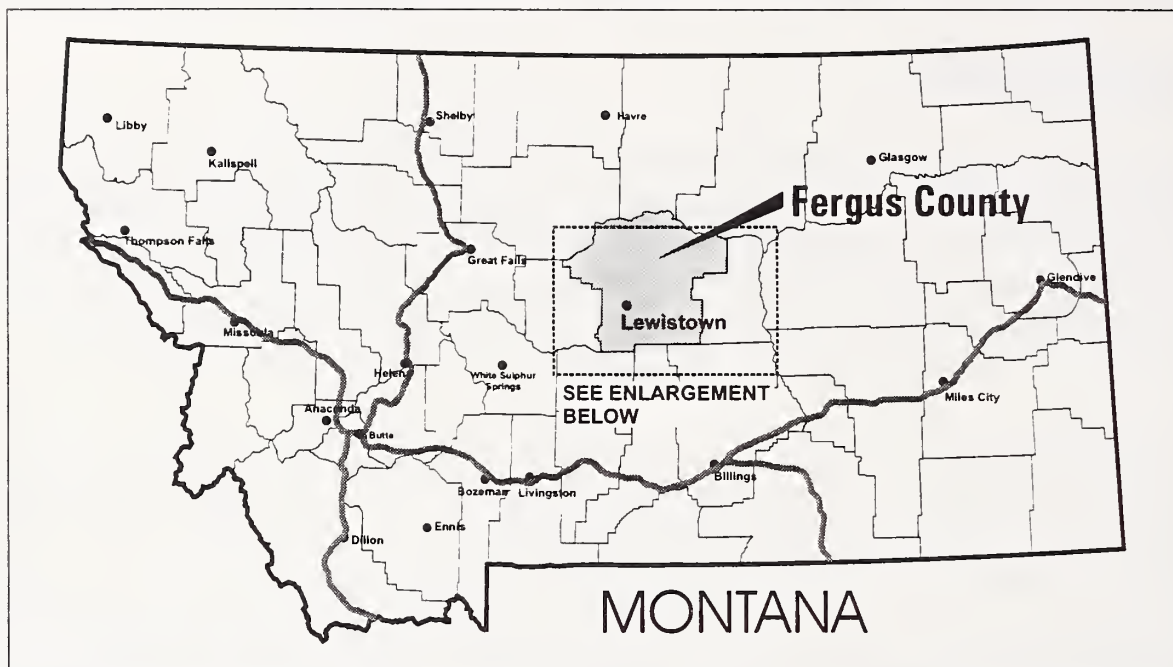


Figure 1-1
Regional Location

Big Springs Trout Hatchery

it allowed the first use of the spring water and eliminated the risk of upstream contamination or diversion. In 1924, the City of Lewistown raised funds and provided a building and free water to help establish the hatchery.

Construction of the upper hatchery (known as the Upper Station) began in the 1930's when the City capped Big Spring and various groups including the CWA and WPA built the rock walled/pond area at the Big Spring. The first residence at the hatchery was built in 1936. The original hatchery building was modified and the first raceways were constructed in 1939. The main hatchery building was constructed around the original raceways in 1948. A concrete bunker over Middle Big Spring was also constructed during the 1940s. Further development occurred at the Upper Station during the 1960s, 1970s, and 1980s including the construction of a fire house, a dam and diversion features in an overflow pond next to Big Spring, and a second residence.

Development at the lower hatchery (or Lower Station) began in 1958 when the State Fish and Game Commission purchased the SE $\frac{1}{4}$ SW $\frac{1}{4}$ of the NW $\frac{1}{4}$ and the SW $\frac{1}{4}$ SE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 5, Township-14-North, Range-19-East. During 1960, thirty concrete raceways, a lower canal, warehouse, and two residences were constructed at the Lower Station. The features between the Upper and Lower Stations, notably Lehman's Spring and an aeration canal, were developed during the late 1960s and early 1970s.

From its inception through the 1940s, operations at the hatchery focused on the production of fish eggs and small fry for planting. In the 1940s the focus shifted to the production of catchable-sized fish. During the 1970s, production efforts shifted again to raising fingerlings. The present use of the hatchery is for rearing and stocking a variety of trout species for lakes and reservoirs in Montana.

1.4 The Threat of Whirling Disease in Montana

Whirling disease is the common name for an affliction that infects certain fish via a microscopic parasite (*Myxobolus cerebralis*) with a two-host life cycle -- fish and worms. This parasite has a free-swimming stage that enters young trout, attacking the cartilage of trout and salmon. In severe cases, the disease can cause high rates of mortality in young fish. Those fish that survive are often subject to a condition where the disease affects the fish's organs controlling equilibrium causing the fish to swim (whirling) erratically. Seriously infected fish have a reduced ability to feed or escape from predators and mortality is high. Those that survive until the cartilage hardens to bone can live a normal life, but are marred by skeletal deformities and/or a symptom known as blacktail. The deformed fish can reproduce without passing on the parasite to their offspring.

When each infected fish dies, thousands to millions of spores formed by the parasite while inside the fish are released to the water. The spores are virtually indestructible and can survive in a stream for twenty to thirty years. Eventually, these spores are ingested by *Tubifex tubifex*, a common aquatic worm that lives within the mud on stream bottoms. After a few months inside the worm, the parasite changes into the free swimming infective stage and is released into the water where it infects a fish host to complete its life cycle. The tubifex worm is not the cause of whirling disease; but like trout, are alternate hosts of the whirling disease parasite. The

microscopic parasite can also be easily and unknowingly transported from streams by humans, animals, and birds. Whirling disease has no known human health effects.

Laboratory and field testing of various trout species and strains have found that cutthroat trout (both westslope and Yellowstone) and all strains of rainbow trout tested are very susceptible to whirling disease. Brown trout are not as susceptible to the disease as rainbow or cutthroat trout and limited testing on bull trout and Arctic grayling indicate these species may also be resistant to the disease. Big Springs Trout Hatchery produces rainbow, brown, and cutthroat trout, and kokanee salmon.

Whirling disease was first detected in the Madison River in December 1994. Since that time, fifty-seven waters in the Montana have tested positive for the disease. Major waterways that presently test free of whirling disease include: the Bighorn, Stillwater, Boulder (of the Yellowstone), Gallatin, East Gallatin, Teton, Bitterroot, Flathead, Kootenai and Marias rivers; Big Spring Creek; and the Madison River above Quake Lake. Montana's nine state, three federal, and ten private hatcheries remain whirling disease free.

As a result of a strategic planning process conducted by the FWP in 1992, five agency goals were adopted. Goal B states that the FWP should: "Provide increased opportunities for public enjoyment of fish, wildlife, and parks resources..." Protecting the state's hatchery system from infection by whirling disease is key to the public's current and future enjoyment of our fisheries. In response to this Goal, FWP is working with the Bozeman Fish Technology Center of the U.S. Fish and Wildlife Service, staff and students at the University of Montana and Montana State University, the Governor's Whirling Disease Task Force, and the Whirling Disease Foundation to combat the disease.

Since whirling disease decimated the Madison River rainbow trout population, the FWP has placed a high priority on preventing the infection of any State hatcheries. Work to protect Montana's hatcheries from whirling disease has been completed or is currently underway at three of the nine state-owned hatcheries.

1.5 Applicable Laws and Directives

1.5.1 Montana Environmental Policy Act (MEPA)

The FWP is required, under the *MONTANA ENVIRONMENTAL POLICY ACT (MEPA)*, to initiate an environmental review process for any project or state action that may significantly impact quality of the physical or human environment. In this instance, the "project or state action" refers to the proposed funding and implementation of improvements to protect the water supply at the Big Springs Trout Hatchery from whirling disease infection.

Therefore, to comply with *MEPA*, FWP must prepare an EA to identify the environmental effects of constructing improvements to the hatchery's water supply and to determine if any impacts of the proposed action are significant. If FWP determines that the proposed action will not have a

significant impact, the agency may issue a Decision Notice and proceed based on the results of the EA. If FWP finds that the project will have a significant impact that is not otherwise mitigated, the agency is obligated to prepare an Environmental Impact Statement (EIS) before proceeding with renovations to the hatchery's water supply.

According to the agency rules implementing *MEPA*, the EA must include:

- a complete description of the proposed action;
- a description of the benefits and purpose of the proposed action;
- a listing of any state, local or federal agencies that have permit requirements, jurisdiction by law, or environmental review responsibility;
- an evaluation of the impacts, including cumulative and secondary impacts, on the physical environment;
- an evaluation of the impacts, including cumulative and secondary impacts, on the human environment;
- a description and analysis of reasonable and prudent alternatives to the proposed action;
- a listing of appropriate mitigation measures;
- a listing of other agencies or groups that have been contacted or contributed information;
- the names of persons responsible for the preparation of the EA; and
- a finding on the need for an EIS.

FWP is also obligated to provide opportunities for the public to review and comment on the proposed action. The agency must consider all substantive comments on the proposed action and make appropriate revisions to the EA before the environmental review process can be completed.

1.5.2 National Environmental Policy Act (NEPA)

The *NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)* requires a comprehensive environmental review of projects or actions proposed by federal agencies prior to their implementation. In this instance, *NEPA* does not apply because federal funds will not be used to pay for the proposed project and federal lands will not be affected by the proposed project at the Big Springs Trout Hatchery. However, FWP is obligated to follow other federal laws protecting environmental resources (such as wetlands and historic or archaeological resources) and to obtain applicable permits from federal agencies prior to constructing the proposed project.

1.5.3 Historic and Cultural Resource Protection

FWP must determine whether the proposed project will adversely affect an historic property or structure to comply with both federal and state historic preservation statutes and regulations. Applicable statutes are *Section 106* of the *NATIONAL HISTORIC PRESERVATION ACT OF 1966* and **Section 22-3-424, MCA**, which outlines the duties of state agencies for identifying and preserving historic and cultural properties. If FWP determines the project will not adversely affect such a property, then the project may proceed as designed. However, if FWP determines

there will be an adverse affect, the agency may enter into a memorandum of agreement (MOA) with the MONTANA STATE HISTORIC PRESERVATION OFFICE and the ADVISORY COUNCIL ON HISTORIC PRESERVATION.

1.5.4 Fisheries and Hatcheries Management Authority

The Montana Legislature enacted **Section 87-1-201(3), Montana Codes Annotated (MCA)**, which grants FWP “...the exclusive power to spend for the protection, preservation, and propagation of fish...” Additionally, **Section 87-1-221(3)** provides for “...construction maintenance, operation, upkeep, and repair of fish hatcheries...for the propagation of fish...”

1.6 Issue Scoping

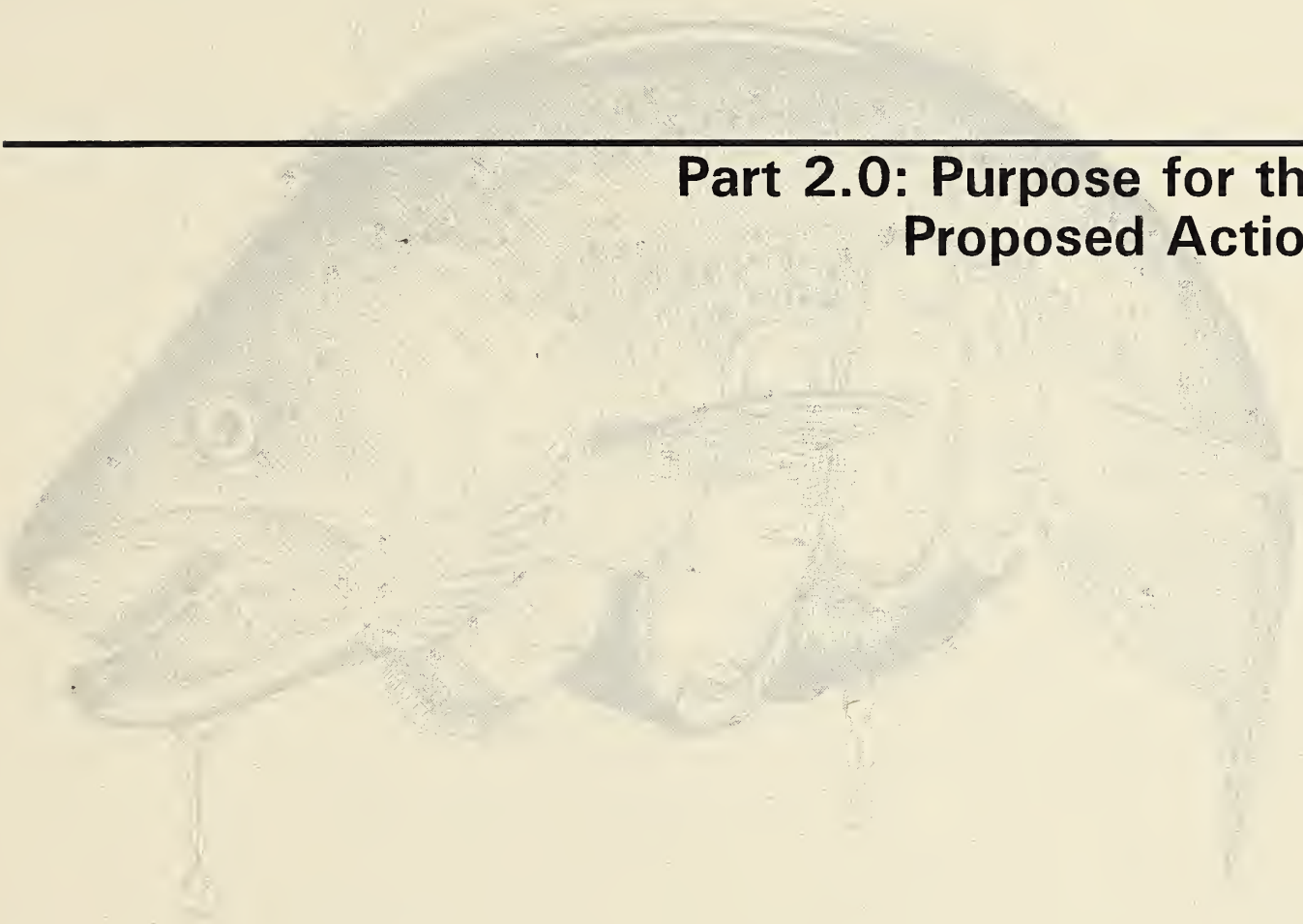
The need for constructing improvements to protect the hatchery from whirling disease infection was initially addressed in a preliminary engineering report prepared by an engineering consultant in 1996. The Hatchery Manager met with the Lewistown City Council on March 18, 1996 and discussed the findings of the preliminary engineering work for the proposed action at the Big Springs Hatchery. In September, 1996, the City Council gave their tentative approval for FWP to proceed with efforts to implement improvements to limit the hatchery’s vulnerability to whirling disease.

Prior to and during the 1997 Session of the Montana Legislature, FWP discussed the potential threat of whirling disease to the hatchery with the public and elected officials. A request for funding for his project was approved by the Legislature and the Governor in April, 1997, following a four-month-long legislative process including public review of FWP budgets and projects, including this proposed project.

The Montana State Historic Preservation Office (SHPO) and the Crow, Northern Cheyenne, Chippewa-Cree, and Fort Belknap Assiniboiné and Gros Ventre Tribes were consulted during late 1997 and early 1998 to identify potential cultural concerns at the hatchery and springs.

Officials with Fergus County will be notified for any pertinent construction and work permits or licenses that are needed from local government.

Part 2.0: Purpose for the Proposed Action



PART 2.0: Purpose for the Proposed Action

2.1 Introduction

Big Springs Trout Hatchery is the FWP's largest salmonid production hatchery and its operation is critical for meeting the Department's current and future fish rearing needs. The primary purpose of this project is to protect the hatchery's water supply from infection by whirling disease. An infection at the hatchery could be difficult to remove, could cost the lives of hundreds of thousands of young trout and possibly result in the accidental spread of the disease to other waters in Montana. Implementing the proposed project will also preserve and enhance the considerable investment of time and money in the facility previously made by the State and will ensure that the Big Springs Trout Hatchery remains a productive component of the State's hatchery system.

2.2 Protect the Hatchery from Whirling Disease Infection

Hatcheries are generally most susceptible to infection by whirling disease at their water sources. Any water source with a natural bottom is considered potential habitat for the tubifex worm host. The bottoms of open creek channels used to convey water to the Upper Hatchery Station offer habitat for the tubifex worm. The encapsulated form of the pathogen can also be transported from the mud of someone's shoes or through the digestive tracts of ducks or shore birds to other ponds and canals on the hatchery grounds. Therefore, water used for hatchery operations at Big Springs is subject to both direct and indirect infection by whirling disease.

Recent research on the distribution and abundance of tubifex worms in Montana's waterways has been conducted in an attempt to determine where trout populations may be at greatest risk. Based on testing activities for this research, streams like Big Spring Creek were found to be high risk waters for whirling disease. During 1995, the family *Tubificidae* was detected in the Burleigh section of Big Spring Creek (about 4.5 miles southeast of Lewistown), in the East Fork, and in Big Spring Creek downstream of Lewistown. The tubifex worm is one species within this family. In March 1996, the presence of *Tubifex tubifex* was confirmed in Big Springs by R. Deedee Kathman, Ph.D. of the Aquatics Research Center. It is now clear that the existing water sources for the Big Springs Trout Hatchery are threatened by the risk of infection from whirling disease.

2.3 Maintain the Hatchery's Role in the Statewide Fisheries Program

Over the past ten years, Big Springs Trout Hatchery has produced an average of more than 2.23 million fish each year. This production total represents about 34% of all coldwater fish species produced by the State's hatcheries. The Big Springs Trout Hatchery produces six strains of rainbow trout, two strains of brown trout, cutthroat trout, and kokanee salmon. Each year, the hatchery produces more than 1.86 million rainbow trout, nearly 75,000 brown trout, about 72,000

cutthroat trout and over 408,000 kokanee salmon for stocking in support of fishery management projects. The numbers of fish produced at the hatchery each year have declined slightly over the past decade since more larger fish are being raised. However, the total weight of all fish produced has remained relatively constant since 1989.

2.3.1 Importance to Statewide Fisheries Program

Together, the nine hatcheries operated by the State stock approximately 550 lakes and reservoirs each year. Over the last decade, the Big Springs Trout Hatchery alone provided fish for an average of 95 waters in all seven FWP regions of Montana. The hatchery has provided fish for as many as 117 waters in the state in past years clearly making an important contribution to sport fishing within the State. Major waters stocked with fish from Big Springs Trout Hatchery include Lake Mary Ronan, Georgetown, Holter, and Hauser Lakes, Canyon Ferry, Beaver Creek, Deadman's Basin, and Martinsdale Reservoirs. The loss of production from whirling disease infection at Big Springs Trout Hatchery would seriously impact the overall fish management program in Montana and recreational fishing throughout the state.

2.3.2 Economic Benefits of the Hatchery within Montana

Fishing and related activities contribute a total of \$215 million each year to Montana's economy according to a 1987 study by the FWP titled "The Net Economic Impact of Fishing in Montana." The study indicated that some \$93 million of this total is attributable to fishing in the lakes and reservoirs the state's hatchery system helps to support.

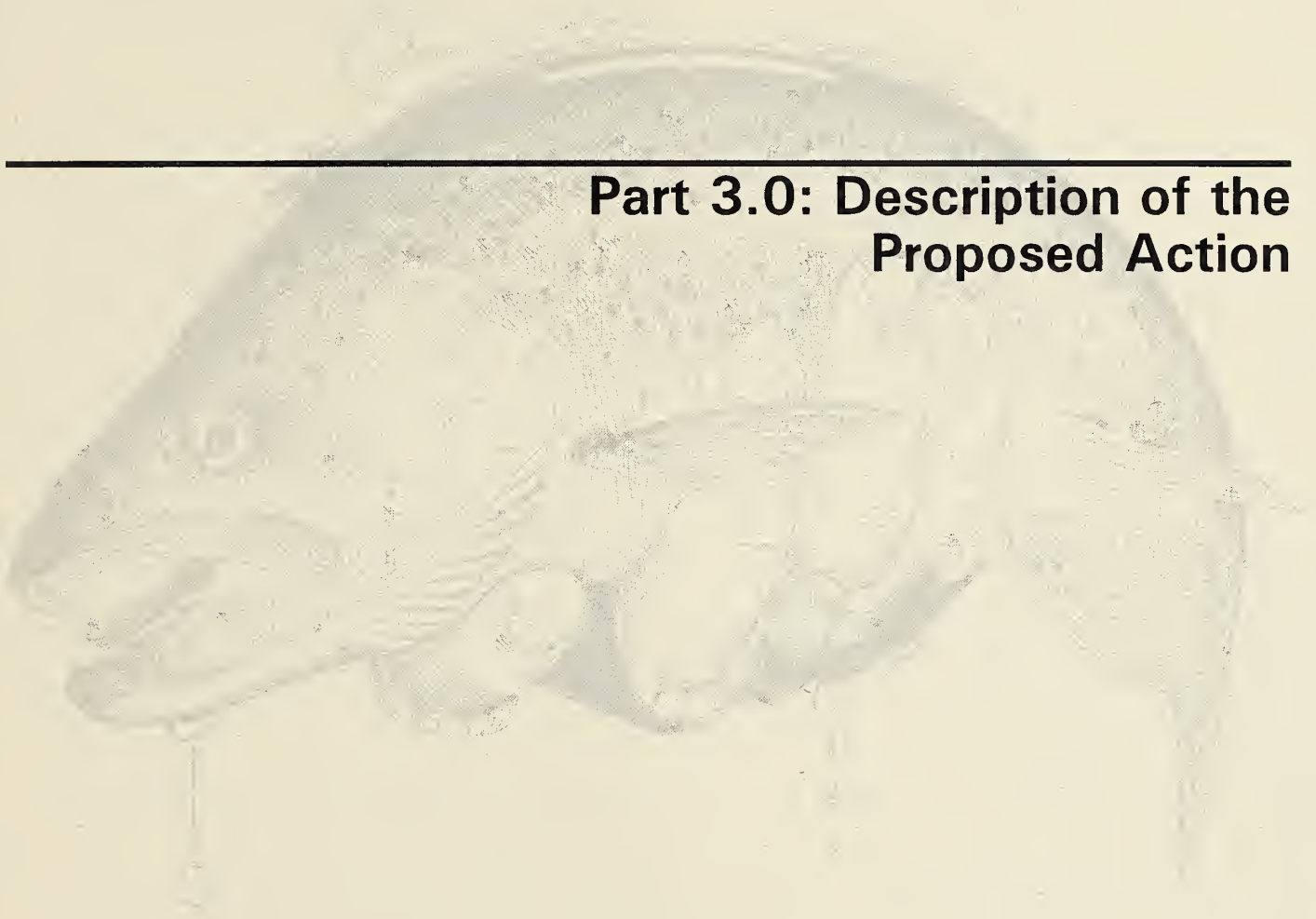
Although difficult to accurately calculate, the economic value of fishing opportunities at waters stocked with fish from Big Springs Trout Hatchery likely accounts for at least ten percent of the \$93 million statewide total given the number of waters served by the hatchery. This clearly suggests that the indirect economic benefits from Big Springs Trout Hatchery are significant to the State.

2.4 Summary of Purpose and Need

The threat of whirling disease infection at the hatchery has been realized with the detection of the tubifex worm in reaches of Big Spring Creek and other nearby waters. Big Springs Trout Hatchery is a key component of Montana's hatchery system and its ability to produce trout for stocking purposes must be preserved. Since the fish produced at the hatchery are used to stock waters throughout Montana, the potential loss of fish production due to whirling disease infection would have statewide implications on the viability of fisheries and recreational activity.

The proposed improvements will help protect the Big Springs Trout Hatchery from whirling disease, enhance and protect the quality of water used by the hatchery, and improve the operational characteristics of the hatchery. This will result in a hatchery capable of producing and maintaining a healthy, whirling disease free supply of trout for stocking purposes for many years to come.

Part 3.0: Description of the Proposed Action



PART 3.0: Description of the Proposed Action

3.1 Project Area Description

The Big Springs Trout Hatchery is located in central Montana in the southeastern portion of Fergus County. The hatchery lies in the relatively narrow northwest-southeast trending valley through which Big Spring Creek flows towards its confluence with the Judith River. The hatchery is situated adjacent to Big Spring Creek, a 31.2-mile-long spring creek, formed by the joining of flows from Hansen Creek and the Big Spring. Castle Creek joins Big Spring Creek near the hatchery. Surface elevations in the project area range from about 4,140 feet at the Lower Hatchery Station to about 4,170 feet at the Upper Hatchery Station. Upland areas in the vicinity of the hatchery exceed 4,500 feet in elevation. Cattle and hay production are the major land uses within the Big Spring Creek drainage.

Upper Big Spring and Middle Big Spring are located east of the Upper Hatchery Station. Lehman's Spring discharges approximately midway between the Upper and Lower Stations. These artesian springs, coupled with Big Springs near the Upper Hatchery Station, comprise most of the flow in Big Spring Creek. The springs originate from the percolation of water into the bedrock of the Big Snowy Mountains. In addition to the State-owned hatchery, two other private fish hatcheries exist nearby. One of the hatcheries uses water from Big Spring Creek and the other uses its own spring source to raise trout for commercial purposes.

3.2 The Hatchery Site

The hatchery is located on approximately 25 acres of leased and State-owned land in Section 5, Township-14-North, Range-19-East as shown in **FIGURE 3-1**. The upper hatchery is located on land leased from the City of Lewistown and the lower hatchery sits on State land.

3.3 Existing Hatchery Facilities

To better understand the scope of the proposed action, it is first necessary to be aware of the facilities that presently exist at the Big Springs Trout Hatchery. The hatchery consists of two complexes, known as the Upper and Lower Stations, developed about one-half mile apart along Big Spring Creek. Buried pipes and open channels used to convey water from Upper, Middle, and Lower Big Spring and Lehman's Spring connect the two stations. Associated with the hatchery stations are a variety of components including aeration equipment; indoor incubation and fish rearing facilities; outdoor raceways designed for growing fish to planting size; an infrastructure of water supply and distribution piping; offices and various service buildings; and residences for hatchery staff.

Major features of the Upper and Lower Stations are shown in **FIGURE 3-2** and described in the following paragraphs.

Source: USGS Pike Creek and Heath Quad Maps

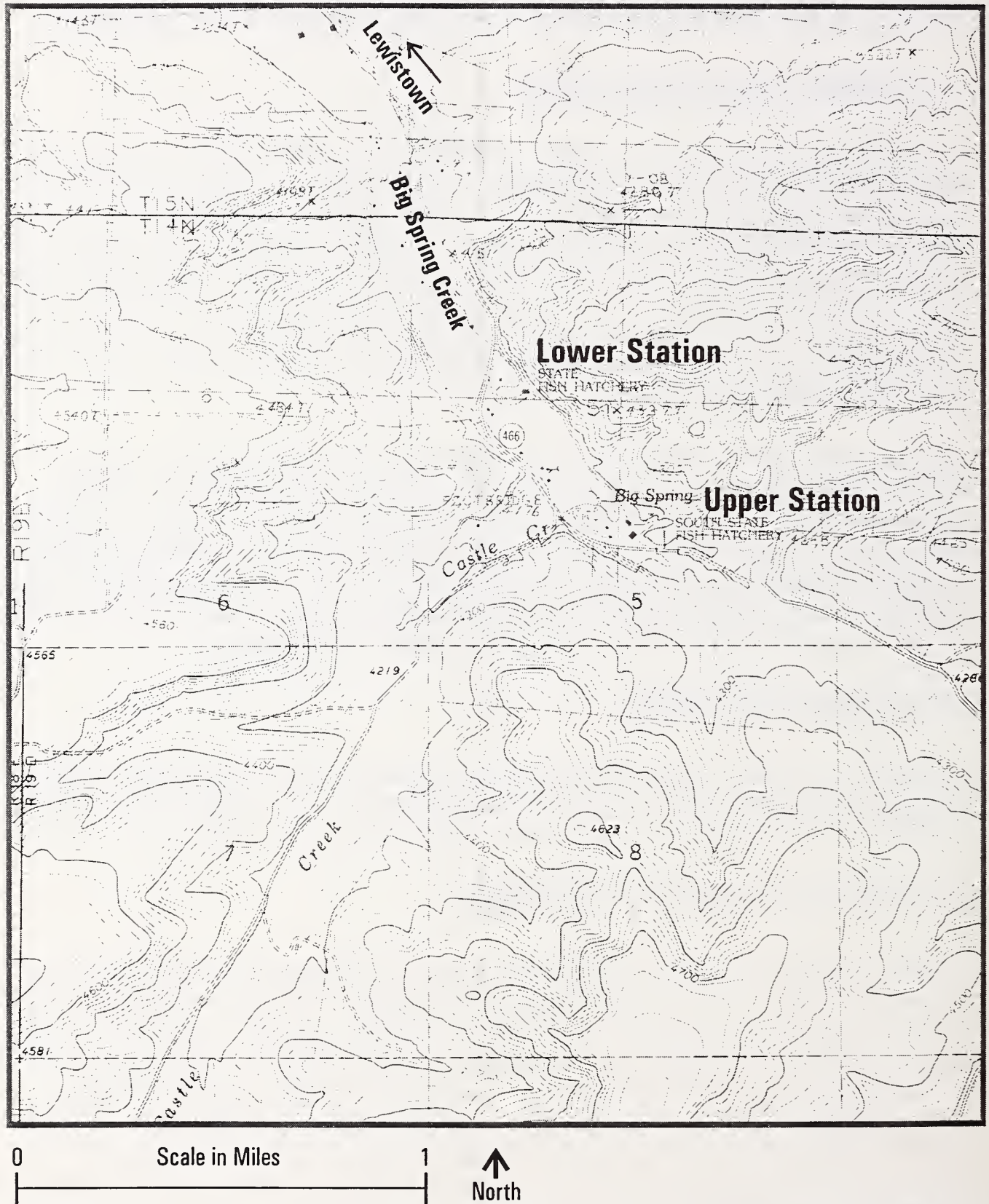


Figure 3-1
Project Area Map

Big Springs Trout Hatchery



Figure 3-2
Existing Facilities and Water Supply
Big Springs Trout Hatchery

3.3.1 Upper Station and Big Spring

The Upper Station includes two buildings with indoor fish rearing facilities, eight small outdoor raceways, two staff residences, and a show pond. This portion of the hatchery is supplied by water from Upper Big Spring and Middle Big Spring which are located northeast of the complex. Water from the springs is collected in bunkers and either piped to the hatchery building and show pond or transported via an open creek channel to the upper raceways. The water used at the Upper Station first flows through the rearing troughs in the main hatchery building and is then reused in the outdoor raceways.

Big Spring, the headwaters for Big Spring Creek, originates near the Upper Station. In addition to providing water for the hatchery, Big Spring serves as the principal source of water for the City of Lewistown. A large collection dome for the City's water supply exists within the Big Spring. Water from the structure is piped more than six miles to the City's distribution system.

3.3.2 Aeration Canals and Lehman's Spring

Water from Big Spring and an adjacent pond is collected and piped to upper and lower concrete-lined canals located between the hatchery stations. The water in the canals is forced over a series of aeration weirs to increase levels of dissolved oxygen before entering the raceways at the Lower Station.

Water for hatchery operations is also collected from Lehman's Spring located on a hillside about midway between the Upper and Lower Stations. Water from the spring is piped to the lower aeration canal.

3.3.3 Lower Station

The Lower Station is comprised of thirty outdoor raceways supplied by water from Big Spring and Lehman's Spring. A large warehouse and shop exists directly east of the raceways. Two residences for hatchery staff are also located at the Lower Station.

3.4 Description of the Proposed Action

In an effort to limit its vulnerability to whirling disease, FWP proposes to implement a variety of improvements to the water supply and distribution systems at the Big Springs Trout Hatchery. The priority for implementing the planned improvements is based on the relative vulnerability of the hatchery to whirling disease. FWP's prioritized list of improvements are listed below:

Priority One

- Bypass open pond below Big Springs collection dome with a piped supply line
- Eliminate open creek supplying upper station and replace with a piped supply line
- Construct a new bunker to collect water from the Big Springs island pond

Priority Two

- Eliminate open flow through lower canal by installing a piped supply line
- Eliminate open flow through upper aeration canal by installing a piped supply line
- Enclose open raceway head troughs at both the upper and lower stations
- Modify raceway inlet controls at both the upper and lower stations

Priority Three

- Rehabilitate existing cover on Middle Spring
- Convert open pond below Big Springs collection dome to a natural stream channel with rock banks

The improvements listed above provide only a brief overview of the proposed action. PART 4.0 contains a detailed discussion of the reason for and extent of these proposed improvements.

3.5 Agency Authority, Funding, and Decisions to be Made

3.5.1 Authority and Funding

The FWP is authorized to spend fish and game funds for the construction, maintenance, upkeep, and repair of fish hatcheries within the State under **87-1-221** and **87-1-222 M.C.A.**, with the consent of the Fish, Wildlife and Parks Commission. Currently, FWP has more than \$1.62 million in funding available for the implementation of the proposed project. The money was appropriated for use specifically on this project by the 1995 and 1997 Montana Legislatures.

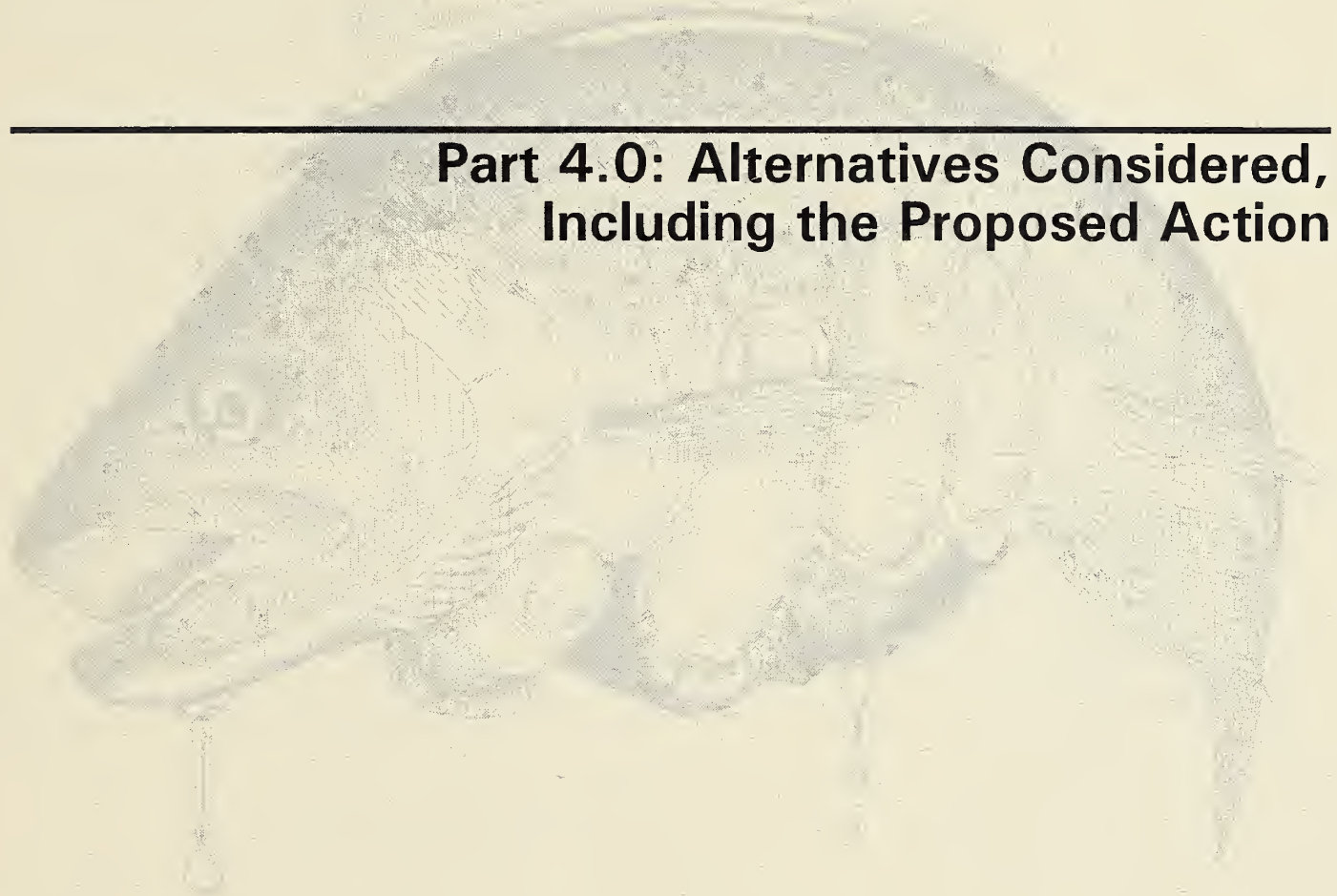
3.5.2 Decisions to be Made and Schedule

The following schedule lists decisions to be made, including the environmental review and public involvement processes for *MEPA*.

May-June 1998	Draft <i>MEPA</i> EA document advertised and distributed for public review
June-July 1998	FWP addresses comments, revises EA if appropriate, and issues a <i>MEPA</i> Decision Notice (* or decides an EIS must be prepared)
July 1998	Consultant produces plans and specifications
August 1998	Bidding and award of construction project
	FWP, Consultant, or Contractor obtains permits for project
September 1998	Construction period begins - Upper Station
November 1998	Construction substantially complete - Upper Station
August 1999	Construction period begins - Lower Station
October 1999	Construction substantially complete - Lower Station

* **Note:** If FWP determines that an EIS must be prepared, a much more lengthy process would be undertaken and a number of months would be added to this schedule.

Part 4.0: Alternatives Considered, Including the Proposed Action



PART 4.0: Alternatives Considered, Including the Proposed Action

4.1 Introduction

The proposed actions discussed in this Part were developed through a preliminary engineering and design process which preceded the development of this document. Proposed actions for this proposed project were identified in the *Preliminary Design Report* for the Big Springs Trout Hatchery prepared for FWP by Robert Peccia & Associates in March 1998. The recommendations made in the design report provided a basis for identifying the alternatives analyzed in this EA. The following text discusses the alternatives initially considered but dismissed, identifies the proposed action, and elaborates on the scope of work and costs associated with implementing the proposed action.

4.2 Alternatives Considered

FWP considered several alternative methods of protecting the water supply at the Big Springs Trout Hatchery from whirling disease infection. These alternatives ranged from taking no action, to methods of treating the water, to enclosing the water sources and the water supply lines to various components of the hatchery. These alternatives are identified below and briefly described in the following paragraphs.

- Take No Action (No Action Alternative)
- Ultraviolet or Ozone Disinfection
- Filtration
- Protect Hatchery Water Sources and Supply Lines

It is important to note that several other alternative actions such as developing a new ground water source for the hatchery, abandoning the hatchery and relying upon fish production from other State-owned hatcheries, and building a new hatchery elsewhere in central Montana were identified but not considered to be viable for various reasons. Some of the reasons included high costs, impracticality, the potential for significant environmental impacts, and the need to preserve the State's considerable investments of land, water, personnel, and facilities for fish production at the Big Springs Trout Hatchery.

4.2.1 Take No Action (No Action Alternative)

The No Action alternative involves doing nothing to eliminate the threat of whirling disease infection at the Big Springs Trout Hatchery. This alternative would not modify any of the facilities at the hatchery or its water sources. However, existing facilities would continue to receive maintenance needed to keep the hatchery operational. This alternative allows minimal improvements to be made utilizing the operating budget for the hatchery. However, no additional capital funds would be available for major improvements. No new impacts would occur on the

surrounding environment since there would be no facilities added or major construction disturbances on the hatchery grounds.

4.2.2 Ultraviolet or Ozone Disinfection

Ultraviolet irradiation and ozone disinfection are methods that could be used to eliminate organisms like the whirling disease parasite from the water at Big Springs. Ultraviolet disinfection systems work by passing water by a series of lamps that generate ultraviolet radiation. The lamps, similar to neon light tubes, are placed inside quartz sleeves and do not directly contact the water. The number of lamps, their spacing, and the detention time for the water passing by the lamps determines the intensity of the radiation delivered to the water. Ultraviolet disinfection works best in waters with low turbidity. Ultraviolet systems would be large and a separate building would be needed to house the disinfection equipment.

Ozone, a strong oxidizing and disinfection agent, is generated by passing oxygen or air containing oxygen through an electric arc. The ozone generated through this process is injected into the water through fine bubble diffusers located at the bottom of a deep contact basin. An ozone system would require that gas not absorbed by the water be collected and passed through a treatment system since residual ozone is harmful to fish. Like ultraviolet systems, the ozone equipment would need to be housed in a separate facility.

4.2.3 Filtration

Filtration to remove parasites and other contaminants from the water could also be used the Big Springs Trout Hatchery. Conventional filtration using replaceable filter elements (cartridges) can remove tiny microorganisms like the whirling disease parasite. Cartridge filters would be used to strain the organisms from the water and are replaced when they become clogged enough that water pressure drops notably when passing through the filter. Conventional filtration for organisms the size of the whirling disease parasite may not be completely reliable, so disinfection would likely be required following filtration.

4.2.4 Protect Hatchery Water Sources and Supply Lines

This alternative consists of a series of improvements to substantially reduce or eliminate the risk of whirling disease infection without adding treatment systems to the water supply. To limit the hatchery's vulnerability to whirling disease, its water sources and supply channels must be enclosed. The alternative also requires making a choice between covering and continuing to use Lehman's Spring or abandoning the use of Lehman's Spring and collecting water from the Big Springs island pond. If Lehman's Spring was abandoned as a hatchery water source, a similar amount of water would be withdrawn from Big Springs island pond and used for hatchery purposes.

The improvements associated with this alternative would install pipes to replace open channels; either cover and continue the use Lehman's Spring or install a new water collection bunker in the Big Springs island pond; install aeration facilities on new buried lines; modify raceway head

canals; rehabilitate the existing concrete cover over Middle Big Spring; install piping to bypass a pond adjacent to the Big Springs collection dome; and remove all manmade structures and return the area to a natural stream setting. These proposed improvements were identified and evaluated in the *Preliminary Design Report* for the Big Springs Trout Hatchery prepared for FWP in May, 1998 by Robert Peccia & Associates.

4.3 Alternatives Dismissed from Consideration

Alternatives considered but not advanced are discussed in this section. The primary factors used to determine if an alternative is viable or not for this proposed action were:

- Does the alternative meet the purpose of the project as discussed in Part 3.0?
- Does the alternative result in adverse environmental impacts?
- How acceptable is the alternative to the FWP?

Three alternatives were eliminated from consideration for this proposed action. The reasons for dismissing each alternative are described in the following paragraphs.

4.3.1 Take No Action (No Action Alternative)

The No Action Alternative is not a viable alternative because it does nothing to protect the water supply or the water used for fish production at the Big Springs Trout Hatchery from the threat of whirling disease. The hatchery would continue to receive water from its existing water sources. No structures would be built to protect or enclose the hatchery's water supply, distribution system, or raceways. The hatchery would continue to operate normally until it became infected, at which time operations would cease.

4.3.2 Ultraviolet or Ozone Disinfection

The use of either ultraviolet or ozone disinfection at Big Springs Trout Hatchery was ruled out due to the costs associated with the processes. According to the *Preliminary Engineering Report for Limiting Hatchery Vulnerability to Whirling Disease* prepared for FWP in 1996 by Robert Peccia & Associates, the costs of installing an ultraviolet disinfection system at Big Springs would be about \$1.8 million. Ultraviolet disinfection also has high maintenance and operational costs.

Further, questions exist about the effectiveness of ultraviolet disinfection in preventing whirling disease. Research data suggests that ultraviolet irradiation may be effective against other life stages of the parasite but not necessarily against its mature spore stage. As of this writing, research remains inconclusive and the amount of radiation needed to kill the parasite has not yet been specifically determined.

Ozone disinfection is more complex than ultraviolet disinfection and possesses many of the same drawbacks for use at Big Springs. High capital costs for installing the system and associated

high costs for maintenance and operation of ozone disinfection equipment make this alternative unattractive to FWP. Like ultraviolet disinfection, the use of ozone to kill whirling disease organisms is not without its unknowns. Extensive study to determine proper dosages of ozone would be needed before the application could be used effectively.

4.3.3 Filtration

The use of a filtration system to protect the hatchery from whirling disease infection was dismissed because the process may not be completely reliable and would have substantial operation and maintenance costs. The whirling disease spore is estimated to be about 8 microns in size, nearly at the limits of effectiveness for conventional filtration. Since the process may not be 100 percent effective in removing the parasite from the water, disinfection would also likely be required before using the water in hatchery operations. For these reasons, filtration is not considered a viable alternative at the Big Springs Trout Hatchery.

4.4 Proposed Action

Only one alternative, **Protect Hatchery Water Sources and Supply Lines**, is considered to be a viable action for the proposed project at the Big Springs Trout Hatchery. This alternative is preferred over the other alternatives because:

- Covering water sources, piping supply and distribution lines, and modifying raceway head canals will virtually eliminate potential avenues of whirling disease contamination. The threat of whirling disease infection would be mitigated since there would be no environment for propagation of the *Tubifex* worm.
- The anticipated costs of the proposed action are much lower than the associated construction, operation, and maintenance costs of options employing disinfection or filtration to combat whirling disease.
- The proposed action maximizes the use of existing hatchery facilities.
- Hatchery operations would remain relatively unchanged, and additional electrical or mechanized equipment would not be required.

4.4.1 Scope of the Proposed Action

The scope of the proposed action was identified in the *Preliminary Design Report* for the Big Springs Trout Hatchery prepared for FWP in May, 1998 by Robert Peccia & Associates. As indicated in Part 3.0, this report identified and established priorities for the proposed improvements based on the relative vulnerability of the facility to whirling disease. The construction features associated with the proposed action are described in the following paragraphs and shown on **FIGURE 4-1**.

New Piping to Eliminate Open Flows. Open channels conveying supply water to hatchery facilities have a high potential of contaminating the hatchery with whirling disease. Therefore,

- ① New 44" HDPE From New Drop Structure; Abandon Existing 30" Pipe.
- ② Bypass the Open Creek Supplying the Upper Station with New 24" HDPE.
- ③ New Collection Bunker in Big Springs Island Pond and 36" HDPE to New Drop Structure.
- ④ New 44" HDPE From New Aeration Structure to Lower Station; Abandon Existing 36" RCP and Lower Canal.
- ⑤ New 44" HDPE in Upper Aeration Canal.
- ⑥ Enclose Raceway Head Troughs and Upgrade Flow Control at Upper and Lower Stations.
- ⑦ Rehabilitate Cover Over Middle Spring.
- ⑧ Remove Existing Intake Crib and Sheet Piling in Bypass Pond .
- ⑨ New 18" Runoff Drain.
- ⑩ New Drop Structure.
- ⑪ New 34" X 53" Elliptical RCP From Big Springs Collection Dome to New Drop Structure.



Figure 4-1
Proposed Improvements
Big Springs Trout Hatchery

piping is proposed to replace: 1) the natural stream which conveys water to the upper hatchery building and the upper raceways; 2) the open pond immediately downstream of the Big Springs collection dome; 3) the upper aeration canal; and 4) the lower canal.

To bypass the natural stream which conveys water to the Upper Station, all flows from Middle and Upper Springs will be diverted into an existing 16-inch diameter main abandoned by the City of Lewistown. New 24-inch diameter high density polyethylene (HDPE) pipe would be tied into this old main to supply the upper hatchery building and raceways.

The open pond below the Big Springs collection dome will be bypassed by connecting new piping into the overflow structure of the collection dome. A collection bunker will be built within the Big Springs island pond and pipe connections will be made to allow this new flow to be combined with flow from the collection dome. New 44-inch diameter HDPE pipe will be installed to convey these combined flows to the upper aeration canal. The piping will continue within the canal to a point near Lehman's Spring where a new aeration facility will be constructed.

The new 44-inch diameter HDPE piping will then continue from the aeration facility near Lehman's Spring to the raceways at the lower station. This pipe will replace the open flow through the lower canal.

New Big Springs Island Pond Collection Bunker. The proposed action will discontinue the use of water from Lehman's Spring in favor of collecting water from a new bunker sized to capture approximately 10,000 gallons per minute (gpm) from the island pond. FWP made this decision because covering Lehman's Spring would be difficult due to the tight working area and instability of steep slopes surrounding the spring which limits the accessibility of the area to construction equipment. The decision to discontinue the use of Lehman's Spring water was made because current flows from the spring do not allow FWP to withdraw its full water right from this source. Additionally, the minor elevation difference between Lehman's Spring and the Lower Station means that water from the spring receives little aeration and when mixed with Big Spring water the amount of nitrogen delivered to the lower raceways is increased. For these reasons, continued reliance on Lehman's Spring for hatchery water will soon result in minor production cutbacks or a deterioration in the quality of fish produced at the hatchery.

Replacing Lehman's Spring with water taken directly from Big Springs will avoid future conflicts with the City of Lewistown's use of capped water. This will allow the needs of the City to be accommodated at times when the City uses its entire water right or in the future if the City demonstrates a need to increase its use of Big Springs water. Another advantage of collecting water from the in Big Springs island pond is that it can be passed through two complete degassing columns to remove nitrogen and increase its oxygen content before being delivered to the lower raceways.

New Aeration Facilities. Since piping will be installed to replace open channels, the method of aeration for hatchery water must also change. Currently water is aerated by natural cascading action in open channels and through the use of "magic fingers" weirs in open aeration canals.

Piped supply lines will operate under pressure flow conditions and allow the installation of packed column aeration facilities to obtain desirable gas concentrations in the hatchery supply waters. Packed column aerators are corrugated metal pipes filled with media (often open plastic rings). The pipe is installed in a vertical position (like a column) and water is passed through a specified depth of media. This treatment process is used to adjust oxygen and nitrogen saturation levels in the water to ensure a healthy environment for fish production. If one pass through the packed column aerator is not sufficient to produce desired gas saturation levels, water may need to be passed through a second packed column.

Testing has shown that a single pass through five to seven feet of media, combined with smaller packed column aerators (kicker columns) at the head of the indoor raceways will provide the necessary aeration for the Upper Station. The new structure (tank) to support the aeration equipment will be located near the northeast end of the upper hatchery building (see **FIGURE 4-1**). This upper aeration facility will contain four columns, each eight feet tall and three feet in diameter. Aerated water from the structure will flow to both the upper hatchery building and the upper raceways. Kicker columns will be installed at the head of each indoor raceway in the upper hatchery building. The existing outdoor aeration column at the Upper Station that serves the old hatchery building and show pond may remain in service.

Testing also showed that Big Springs water supplying the Lower Station will require two aeration passes to achieve desirable gas concentrations. The first pass aeration facility will be constructed near or downstream of Lehman's Spring and include twelve columns, each eight feet tall and four feet in diameter. To achieve a second pass, kicker columns will be installed at the head of each raceway. This requires that the existing open head canal be replaced with hard piping and extending the existing raceways across the head canal.

Modifications to Raceway Head Canals. Head canal modifications at both the upper and lower raceways are necessary for two reasons. First, the head canals need to be enclosed to further minimize the hatchery's vulnerability to whirling disease. Secondly, the inlets at the head of each raceway must be modified to prevent leakage into the raceways from the head canal during non-use periods.

These objectives will be accomplished at the lower station by replacing the open head canal with a 44-inch diameter piped header and 8-inch diameter laterals to each raceway. The new piped header will be buried just outside of the existing head canal and laterals will be equipped with an isolation valve to allow any combination of the raceways to be shut off during periods of non-use. A drain port will also be installed on each lateral to prevent freezing when a raceway is not being used. This piped header/lateral system will accommodate kicker aeration columns at the head of each raceway.

At the upper station, fiberglass covers will be installed over the existing open head canal. Fiberglass panels would provide the necessary structural support for snow loads, would be durable, and would be relatively easy to remove for head canal cleaning or maintenance. Additionally, the existing raceway inlets should be replaced with concrete head walls and ports as mentioned above.

Rehabilitation of the Middle Spring Cover. The existing concrete cover over Middle Spring has deteriorated significantly. Concrete continues to spall off the interior walls and roof, falling into the spring and potentially ending up in the supply lines to the upper station. Additionally, several holes have opened in the roof, allowing access to the spring for birds or other small animals. In order to limit the susceptibility of the spring to whirling disease, it is recommended that the cover be repaired. The interior of the structure will be rehabilitated by using an adhesive, spray-on (polymeric cement) mortar. The mortar is capable of restoring structural integrity of the collection structure as well as preventing further corrosion of the concrete. The mortar would be applied in an approximately 1/2-inch thick layer. In addition, the rough areas on the exterior of the structure would be patched with a non-shrink, weather resistant grout.

Improvements to the Bypass Pond. Once the open pond adjacent to the Big Springs collection dome is bypassed with hard piping, the existing intake crib in the pond will no longer be needed and will be removed. In addition, to increase the aesthetics of the pond area, it will be converted to a natural stream setting with rock banks and possible wetlands areas. The sheet piling which currently backs up the pond will be removed.

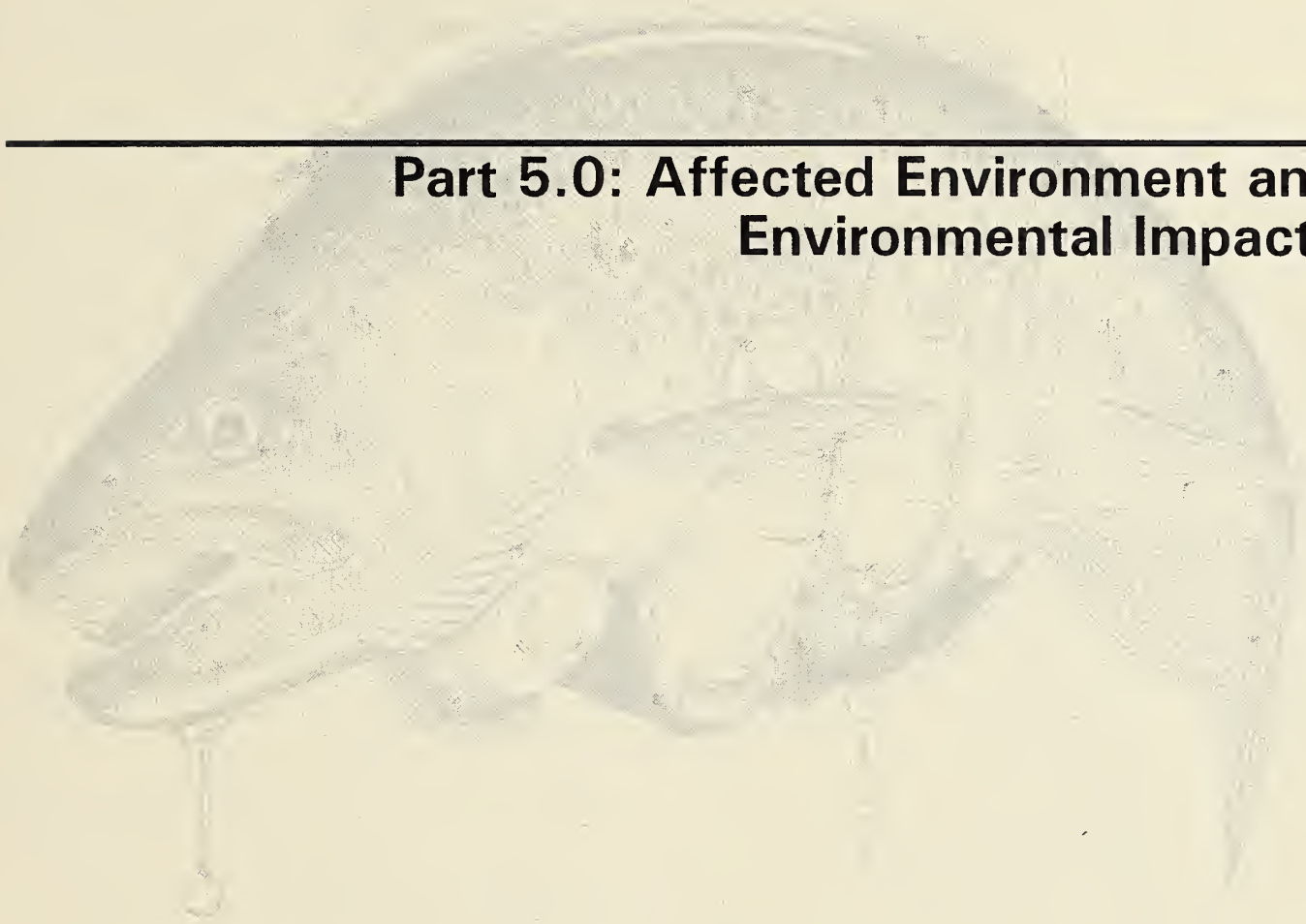
4.4.2 Estimated Cost of the Proposed Action

The estimated costs of the proposed improvements to the Big Springs Trout Hatchery are shown in **TABLE 4-1**. The improvements are designed to protect the hatchery from whirling disease, to enhance and protect the quality of water used by the hatchery, and to improve its operational characteristics. Note that all costs are for construction only (including a 10% contingency), and do not include engineering, legal, administrative costs, etc.

Table 4-1
Construction Cost Estimate for Recommended Improvements

Proposed Improvement	Estimated Cost
Upper Station Supply Piping and Head Canal Modifications	\$78,600
Upper Station Central Aeration Facility	\$65,800
Runoff Drain (18") at Upper Station	\$35,200
New Collection Bunker in Island Pond including Piping and New Drop Structure	\$262,500
Supply Piping (44") to Lower Station	\$336,200
Lower Station First Pass Central Aeration Facility near Lehman's Spring	\$228,200
Lower Station Piped Header (44"), Kicker Columns (24"), and Raceway Extensions	\$293,400
Rehabilitate Middle Spring Collection Structure with Spray-On Mortar	\$46,900
Improvements to Bypass Pond	\$6,000
TOTAL:	\$1,352,800

Part 5.0: Affected Environment and Environmental Impacts



PART 5.0: Affected Environment and Environmental Impacts

5.1 Introduction

The probable environmental effects of the Proposed Action and the No Action Alternative are discussed in this Part of the Environmental Assessment. The No Action Alternative is being analyzed for the purposes of providing a contrast or comparison with the impacts of the Proposed Action. A concise description of the existing social, economic, and environmental setting of the project area affected by these alternatives is presented prior to text describing the potential environmental impacts of the alternatives being analyzed. Some impacts will not occur as a result of the proposed project and other impacts were so minor that detailed studies were not warranted. Only environmental effects with a reasonable possibility for individual or cumulative impacts are assessed in this Part. Where appropriate, measures to mitigate the environmental impacts of this proposed project are discussed in each section.

5.2 Resources Unaffected by the Proposed Action

The following physical and human environmental resources were considered and will not be affected by either the Proposed Action or No Action Alternative.

Physical environment

- Climate
- Farmland or Agricultural Productivity
- Geology and soils (including Prime and Unique soils)
- Wild and Scenic Rivers
- Coastal Zones

Human environment

- Population of Lewistown or surrounding areas of Fergus County
- Housing in Lewistown or surrounding areas of Fergus County
- Economic or social conditions of local residents
- Industrial or commercial development
- Undeveloped or vacant land near Big Springs
- Transportation systems
- Other construction projects

5.3 Environmental Impacts

The alternatives evaluated will affect the following environmental resources and social issues:

5.3.1 Land Use Impacts

Lands in the vicinity of the Big Springs Trout Hatchery are primarily used to graze cattle or raise hay. Scattered rural residences with outbuildings are present along Secondary Highway 466 in

the vicinity of the hatchery. No industrial or commercial facilities would be affected by this proposed project.

The use of lands in the project area is guided by the Fergus County Land Use Policy, the County's adopted land use plan. The county has also implemented subdivision regulations to regulate new development. Contacts with the Lewistown/Fergus County Planning Board verified there are no known major development plans in the vicinity of the Big Springs Trout Hatchery. However, numerous minor subdivisions of rural land have occurred in the general area of the hatchery.

Impacts of the Proposed Action: The Proposed Action would not have substantial impacts on existing land uses within the project area since the proposed work would occur entirely on lands already used for hatchery purposes. The proposed improvements to the hatchery would not change land uses or alter the rate at which lands in the vicinity are developed. The proposed action would not require the relocation of any residents of the project area.

Since there are no known development plans for lands adjacent to the hatchery, the proposed action would not be expected to alter or conflict with the productivity or profitability of any existing or future land uses. The proposed action would not conflict with the Fergus County Land Use Policy.

Impacts of the No Action Alternative: This alternative would have no impact on the existing land uses in the project area.

5.3.2 Community Impacts

Data from the U.S. Census shows the total population of Fergus County declined by only about 4% between 1970 and 1990. The County's population increased slightly during the 1970-1980 period but declined by more than 7% during the 1980s. According to the U.S. Census, Fergus County's population totaled about 12,100 in 1990. Recent information from the MONTANA DEPARTMENT OF COMMERCE CENSUS AND ECONOMIC INFORMATION CENTER (CEIC) estimates that the population of Fergus County was about 12,700 as of mid-year 1996. This data suggests an increase of more than 5% since 1990.

The Big Springs Trout Hatchery is located within the U.S. Bureau of the Census' Lewistown census subdivision. Data shows the total population of rural areas of the Lewistown census subdivision (i.e. areas outside the City of Lewistown), increased by more than 7% during the 1980-1990 period. Although no recent estimate of population is available for this census subdivision, the population of this rural area has likely continued to increase at a slightly higher rate than experienced in other areas of the county since 1990.

According to the U.S. Census, the residents of rural areas within the Lewistown census subdivision possessed the following characteristics in 1990 as compared to statewide averages:

- Only 1% of the population were minorities as compared to a statewide average of 8%.

- More than 15% of the residents were over the age of 65 as compared with an average of 13% for the State.
- The median household income was \$21,292 and per capita income was \$10,615 as compared to statewide averages of \$22,988 and \$11,213, respectively.
- Some 11.4% of the families had incomes below the poverty level as compared to a statewide average of 12.0%.
- The average household size was 2.73 persons as compared to a statewide average of 2.53 persons.

Impacts of the Proposed Action: This proposed action will not have any significant impact on the location, distribution, density or growth rate of the population in Fergus County or the project area. The proposed action would not cause adverse community impacts because it would not: require the relocation of any residences; alter surface transportation patterns; divide or disrupt an established community; disrupt orderly, planned development; or alter the level or distribution of employment or community or personal income within Fergus County.

Traffic volumes on roads leading to the hatchery would increase slightly during the construction period due to workers traveling to and from the job site and the delivery of building supplies and other equipment needed for the hatchery improvements.

Impacts of the No Action Alternative: This alternative would not require the acquisition of land and would not displace households, businesses, or other areas used for human activities. Taking no action would not influence population growth, distribution or economic conditions in Fergus County.

5.3.3 Economic Impacts

The hatchery is situated on land owned by the State of Montana and on land leased from the City of Lewistown and other private landowners. Due to this ownership, the hatchery is not included in the tax bases of either the state or county governments.

The economy of Fergus County was and continues to be dominated by agriculture. Other major contributors to the county's economy are retail services related to recreation and tourism, professional services, construction, and manufacturing. Within the project area, ranching and growing hay is the dominant economic activity.

Impacts of the Proposed Action: The proposed action would not affect local or state tax bases and revenues. Since land acquisition is not required for the proposed action, no private property would be removed from the tax bases of local or state government.

Construction of the proposed action could result in slight temporary increases in economic activity in Lewistown due to construction worker spending for food, lodging, and entertainment.

Impacts of the No Action Alternative: This alternative would have no impact on local or state tax base and revenues.

5.3.4 Public Services/Utilities/Energy

The current FWP staff at the Big Springs Trout Hatchery consists of five full-time personnel and one part-time person. For Fiscal Year 1998, about \$323,000 has been budgeted by FWP for staff services and for operating and maintaining the hatchery.

The City of Lewistown obtains its municipal water from a collection dome in the Big Spring at the Upper Station. Water from the Big Spring is piped via two underground transmission lines across located hatchery property at both the Upper and Lower Stations.

Existing utilities serving the hatchery include Fergus Electric (electricity), Montana Power Company (natural gas for heat), U.S. West (telephone lines).

Impacts of the Proposed Action: This alternative would not increase FWP staffing requirements at the hatchery. The proposed action would not substantially increase administrative, operational, or maintenance costs for the hatchery. The collection dome at Big Spring and transmission lines for the City of Lewistown's water supply would not be disturbed by the proposed action.

The proposed action would not require a substantial expansion of electrical power, communications, or other fuel supply systems at the facility. There would be no long-lasting adverse impact on the energy supply of the area. The use of energy would increase for a short time during the construction of the proposed improvements, however, existing energy supplies can easily accommodate this increased demand. The project would not use energy resources or natural materials that are in short supply.

Impacts of the No Action Alternative: This alternative would have no impact on public services, local or state tax base and revenues, or utility systems.

5.3.5 Impacts on Water Resources and Quality

a) Surface Water Resources

The surface water resources in the vicinity of the Big Springs Trout Hatchery include Big Spring Creek, Castle Creek, and Hansen Creek. Hansen and Castle Creek originate in the foothills of the Big Snowy Mountains some six miles south of the hatchery. The confluence of Hansen Creek with artesian flows from Upper, Middle and Big Springs form the beginning of Big Spring Creek. Castle Creek joins Big Spring Creek about one-quarter mile downstream from the Upper Station of the hatchery.

Big Spring Creek is one of the largest spring-fed streams in Montana and flows about 32 miles from its origin to its confluence with the Judith River. The stream is high in dissolved solids, exceptionally productive, and is considered to be a "blue-ribbon" fishing water. FWP regards Big Spring Creek as one of Montana's finest trout streams. Records of flows in Big Spring Creek at the U.S. GEOLOGICAL SURVEY gauging station above Lewistown show the base flow of the

stream is about 130 cubic feet per second (cfs).

The MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY (MDEQ) has established water use classifications and related water quality standards for all drainages in the state. The water in Big Spring Creek is classified by the State of Montana as B-1. This designation means that these waters are suitable for drinking; culinary and food processing purposes after conventional treatment; bathing, swimming, and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply.

Effluent from the raceways and rearing facilities at the hatchery is discharged directly into Big Spring Creek. The discharge of the effluent is regulated by separate Montana Pollution Discharge Elimination System (MPDES) Fish Farm General Discharge Permits, one each for the Upper Station and Lower Station. The permits require semi-annual total suspended solids (TSS) tests, with composite samples taken both during raceway cleaning activities and during normal operations at each station. No other water quality parameters are regulated under the permit.

FWP is examining options to construct settling basins or micro strainers for effluent treatment but this is not part of the proposed action.

Impacts of the Proposed Action: The proposed action would not cause major changes in drainage patterns or the rate and amount of surface runoff from the hatchery grounds. Areas disturbed by construction will be promptly revegetated to minimize erosion and transport of sediments to surface waters in the project area.

Water used in the fish-rearing process would continue to be discharged into Big Spring Creek under the proposed action subject to the terms of the hatchery's MPDES permits.

Impacts of the No Action Alternative: The No Action Alternative would not adversely affect the quality of surface waters in the project area. Effluent from the hatchery would continue to flow into Big Spring Creek subject to the parameters of the hatchery's discharge permits.

b) Ground Water Resources

Ground water resources in the vicinity of the hatchery include Big Springs (Upper, Middle, and Big Springs) and Lehman's Spring. The water flowing from these springs originates more than 1,000 feet below the ground surface in the Madison Formation. Ground water from the formation leaks upward through faults and fractures in other bedrock formations and surfaces at these locations near the hatchery. The water from the springs originates from the percolation of precipitation into the bedrock of the Snowy Mountains. The total spring flow is estimated to be 90 million gallons per day (MGD). The quality of the water originating from these springs is excellent and has a constant temperature of between 50 and 56° Fahrenheit.

The City of Lewistown uses water from the Big Spring as its sole source of potable water and has done so since 1936. The City does not filter or disinfect the water drawn from this ground water source. Inorganic chemical water quality data compiled through testing of the water source

shows that the potable water supply is in compliance with all current inorganic chemical contaminant regulations. Additionally, the levels of sulfate and manganese in the water are low and are below the maximum allowable levels for these constituents included in a proposed list of chemicals for future regulation under the federal *SAFE DRINKING WATER ACT*. The water has also been tested for more than fifty organic chemicals and shown no detectable levels of any volatile or synthetic organic chemicals. Testing has shown Big Springs water to be in compliance with water quality regulations governing lead and copper levels and radiological constituents.

The only treatment required for using the water in hatchery operations is aeration to “strip” nitrogen and to slightly increase the dissolved oxygen content through aeration. Natural water sources such as the Big Springs often contain high levels of nitrogen and less than optimum levels of dissolved oxygen for fish production. High levels of nitrogen can be deadly to fish by causing gas bubble disease (similar to “bends” in human divers). Packed columns and “magic fingers” weirs are used at the Big Springs Trout Hatchery to decrease the amount of nitrogen in the water and increase the amount of dissolved oxygen.

Both the City of Lewistown and Big Springs Trout Hatchery utilize water from the Big Spring collection dome and share water rights totaling 19,125 gpm from this source. The City has a municipal water right of 6,777 gpm of this total which means approximately 12,348 gpm is available to the hatchery’s Lower Station. In total, the hatchery now owns water rights usable for the Lower Station of 22,206 gpm including a 8,289 gpm right from Lehman’s Spring and an existing right of 13,917 gpm from the Big Springs.

FWP was recently granted authorization to change the point-of-diversion for its 8,289 gpm water right from Lehman’s Spring to instead allow this withdrawal to occur from Big Spring. With this authorization in hand, the hatchery now has its choice of withdrawing this amount of water from either Big Spring or Lehman’s Spring.

Impacts of the Proposed Action: This alternative would not cause changes in the quality or quantity of ground water in the project area or adversely affect other groundwater users. However, changes to the point-of-diversion of ground water would occur under the proposed action. Currently, the hatchery obtains water at Lehman’s Spring from an open, unprotected pool and diverts it to the Lower Station.

The proposed action would include facilities to allow the collection of the Lehman’s Spring right portion of water for hatchery operations at Big Springs. A new intake bunker would be installed in the Big Springs island pond at the Upper Station which would enable the hatchery to collect the Lehman’s Spring water right from the Big Springs. This will ensure that the hatchery has the capability of withdrawing its full water right at one central location with adequate protection against whirling disease contamination. The water would be collected from an open and unused portion of the Big Springs island pond which currently flows into Big Spring Creek. This intake structure would not affect the City of Lewistown’s ability to withdraw its full water right from the Big Spring collection dome.

The diversion of additional water from the Big Springs island pond as proposed would

intermittently reduce stream flows in Big Spring Creek between the pond and Lehman's Spring, a distance of about 1,500 feet. Since the hatchery operations are a non-consumptive use, all diverted water would be returned to Big Spring Creek at the discharge point for effluent from the Lower Station. The reduced flow in the section of Big Spring Creek between the island pond and Lehman's Spring would reduce stream flows but not to a level which would adversely affect the aesthetics or aquatic life in this reach of Big Spring Creek.

Impacts of the No Action Alternative: The No Action Alternative would not affect groundwater resources in the project area.

5.3.6 Floodplain Impacts

The U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE, in cooperation with the Fergus County Conservation District and DNRC, prepared a floodplain study for Big Spring Creek and its tributaries in July, 1980. The study entitled *Flood Hazard Analyses Big Spring Creek and Tributaries* provides information about the locations and elevations of the 100-year and 500-year floodplains. The 100-year (or base) flood represents a flood event that has a 1% chance of being equaled or exceeded in any given year. The 500-year flood represents a flood event that has a 0.2% chance of being equaled or exceeded in any given year. The area covered by water from either of these flood events is referred to as the 100-year or 500-year floodplain.

The *Flood Hazard Analyses Big Spring Creek and Tributaries* identified the 100-year floodway and the 100-year and 500-year flood fringes for portions of Fergus County, including the project area. The designated floodway is the channel of a stream plus any adjacent floodplain area that must be kept free of encroachment to prevent increases in flood heights of no more than 0.5 feet. The flood fringe is the area within the floodplain that would be inundated by either the 100-year or 500-year flood events.

Flood hazard maps prepared for the study show that no hatchery buildings lie within the designated 100-year floodway or the 100-year or 500-year flood fringe areas. However, the raceways and a portion of the aeration canal at the Lower Station are located within the 500-year flood fringe. The risk of flooding in the vicinity of the hatchery and downstream areas was reduced significantly following the construction of a flood control and recreation dam on Hansen Creek above the Upper Station in 1974. The Hansen Creek Dam, as well as other flood control structures in the Big Spring Creek drainage, proved to be effective in reducing damages during a major flood in 1975. The type and extent of flooding in 1975 was indicative of a 100-year flood event.

Fergus County has adopted Floodplain Regulations to regulate development within designated floodplains. A Floodplain Development Permit from the County will be required for any encroachments into the floodplains of Big Spring or Hansen Creeks.

Impacts of the Proposed Action: Based on a review of flood hazard maps covering the project area, it is possible that the installation of piping along the upper and lower aeration canals may encroach upon the 100-year floodway of Big Spring Creek. Additionally, work proposed at the

raceways of the Lower Station would occur within the designated 500-year flood fringe. However, no floodplain impacts are likely because piping would be buried and improvements to the raceways would occur at already existing facilities. These activities would not alter the course of flood waters or other surface flows, cause substantial increases in the magnitude of flood waters, or expose downstream property to increased risk of flooding.

A floodplain development permit from the Floodplain Administrator of Fergus County will be needed for any construction proposed within the 100-year floodplain of Big Spring or Hansen Creek. The design for the proposed improvements and flood hazard information will be reviewed to determine potential encroachments on designated floodplains.

Impacts of the No Action Alternative: The No Action Alternative would not affect delineated floodplains in the project area.

5.3.7 Fish and Wildlife Impacts

Contacts with wildlife management agencies and the MONTANA NATURAL HERITAGE PROGRAM (MNHP) and literature reviews were used to identify the fish and wildlife resources that exist within the area of the proposed action.

a) Threatened and Endangered Wildlife

FWP regional staff were contacted for pertinent information about whether any federally-listed threatened and endangered species or their critical habitats would be affected by this project. The following species are currently listed for Montana: Black-footed ferret, gray wolf, grizzly bear, eskimo curlew, interior least tern, piping plover, whooping crane, bald eagle, peregrine falcon, pallid sturgeon, and white sturgeon.

According to the FWP's Arnold Dood, Endangered Species Coordinator, bald eagles and peregrine falcons may potentially occur in the project area. Both species are listed as "threatened" by the U.S. FISH AND WILDLIFE SERVICE (USFWS) and may occur as seasonal migrants. These species are discussed further in the paragraphs below.

- **Bald Eagles** According to the *Montana Bald Eagle Management Plan* prepared by the Montana Bald Eagle Working Group in 1986, the project area falls within the Missouri Basin Bald Eagle Management and Recovery Zone (Zone 47). Bald eagles may occur in the project area as spring and fall migrants. No bald eagle nests or breeding territories are known to exist in the project area.
- **Peregrine Falcons** Peregrine falcons may be found in the project area during their spring and fall migration. However, no peregrine falcon nest territories are known to exist in the project area.

Impacts of the Proposed Action: Because no nests or breeding territories exist in the vicinity

of the Big Springs Trout Hatchery, it is unlikely that the Proposed Action will have any negative effects on either bald eagles or peregrine falcons or any critical habitats for these species.

Construction activities during the spring and fall could temporarily disturb migrating bald eagles or peregrine falcons. Few, if any, bald eagles or peregrines would be expected to be displaced at the time of construction since the occurrence of the species in the area is limited. Habitat similar to the areas disturbed by construction is abundant in the project vicinity and offers ample opportunities for use by any displaced bald eagles or peregrines.

Impacts of the No Action Alternative: The No Action Alternative will not impact any threatened and endangered wildlife species in the area of the proposed project.

b) Wildlife Species of Special Concern

In addition to species listed by the USFWS under the *ENDANGERED SPECIES ACT*, other wildlife species have been designated as species of special concern by other agencies including the FWP and the MNHP. Wildlife species of special interest or concern are listed by county for mammals, reptiles, and amphibians and by latilong for birds. A latilong is a mapping unit formed by successive lines of latitude and longitude, each at one degree intervals. The average dimension of a latilong is 47 miles wide and 69 miles long, representing an area of about 3,200 square miles. MNHP species distribution information for birds is also available by quarter latilongs, representing an area of about 800 square miles.

In Fergus County, seven mammal species of concern are known or suspected to occur. These are the Preble shrew, dwarf shrew, Merriam shrew, big-eared bat, black-tailed prairie dog, black-footed ferret, and lynx. Four reptiles of special concern including the spiny softshell turtle, snapping turtles, milk snake, and plains hognose snake.

The project area falls within the southeastern quarter of Latilong 19. According to information obtained from the MNHP and FWP, thirteen bird species of special concern in Montana are listed as transients or breeding species within this quarter latilong. These are the American white pelican, bald eagle, Cooper's hawk, northern goshawk, ferruginous hawk, golden eagle, upland sandpiper, long-billed curlew, Franklin's gull, Northern pygmy owl, Northern saw-whet owl, clay-colored sparrow, and bobolink.

Contacts with the MNHP indicate there are no records of any of these species of special concern occurring within the proposed work area at the Big Springs Trout Hatchery. However, the lack of records does not mean the species could not exist in the project area.

Impacts of the Proposed Action: The Proposed Action would not result in any notable effects on wildlife species of special concern due to the localized nature of the water protection measures under consideration at the fish hatchery. Since new construction would generally disturb the locations of existing facilities, there would be only minor losses of habitat or and minimal displacement of any sensitive species.

Impacts of the No Action Alternative: There would be no affect on wildlife species of special concern.

c) Fisheries

Big Spring Creek provides habitat for a variety of fish species. According to the Montana Rivers Information System, the fish species present in Big Spring Creek near the hatchery include:

<u>Species</u>	<u>Abundance</u>	<u>Stream Use</u>
Rainbow Trout	Common	Resident
Brook Trout	Incidental	Undetermined
Brown Trout	Common	Resident
Common Carp	Present	Undetermined
Longnose Dace	Common	Resident
Lake Chub	Present	Undetermined
Fathead Minnow	Present	Resident
Longnose Sucker	Common	Resident
White Sucker	Common	Resident
Shorthead Redhorse	Present	Undetermined
Mountain Sucker	Present	Undetermined
Mountain Whitefish	Uncommon	Resident
Mottled Sculpin	Abundant	Resident

The entire length of Big Spring Creek is designated by FWP as a Class I or “Blue Ribbon” fishery. This is the highest rating that can be assigned to a stream resource in the State.

Impacts of the Proposed Action: The impacts of this alternative on fisheries are expected to be minor. Effluent from the raceways at the Upper and Lower Stations would continue to be discharged to Big Spring Creek. The effluent does not contain pathogens or other constituents at levels harmful to fish or other aquatic life. The discharge of effluent is subject to the conditions of Montana Pollution Discharge Elimination System (MPDES) statewide permit for fish farms. Effluent from the hatchery is periodically sampled to ensure compliance with the conditions of the MPDES permit.

Impacts of the No Action Alternative: This alternative would have no impact on fisheries in the project area.

d) Other Wildlife

Many species of non-game birds, mammals, amphibians, and reptiles occur on or near the project area. According to information about the distribution of amphibians, reptiles, and mammals published by the Montana Audubon Council (L.S. Thompson, 1982), thirty-eight mammals, two amphibians, and two reptiles may occur in Latilong 19, which includes the project area. Data from the MNHP shows that 133 bird species are known to occur in the quarter latilong which includes the project area. Obviously, not all of the species would be expected to be found in the

project area due to the lack of suitable habitats for all species.

It is impossible to identify the species that inhabit lands adjacent to the hatchery without a site-specific species inventory. However, Big Spring, Castle and Hansen Creeks and their associated riparian lands and adjacent uplands comprise the major habitats used by wildlife in the vicinity of this project. These areas support whitetail and mule deer, small and medium-sized mammals, raptors, and a variety of game and song birds.

Impacts of the Proposed Action: Impacts to the wildlife species in the project area would be displacement during construction and the loss of minor amounts of habitats due to ground clearing to accommodate construction of new facilities at the hatchery. This impact would be temporary and no long-term negative impacts or irretrievable losses to wildlife or habitat would occur with this project.

Cumulative impacts of this project and other developments in the area will not result in a decline of wildlife species or numbers. Disturbances to native plant communities that provide habitat for wildlife will be minimized and unnecessary disturbance beyond the construction zone will be avoided.

Impacts of the No Action Alternative: This alternative would have no impact on wildlife species in the project area.

5.3.8 Vegetation

The project area lies in a transitional zone between foothills vegetated with grasses and riparian species and uplands covered with lodgepole pine, Douglas fir, and eastern Montana ponderosa pine. Grassland/riparian species common in the area include blue grama, needle and thread, aspen, hawthorne, serviceberry, chokecherry and rose.

Plant communities likely to be found along riparian lands in the vicinity of the Big Springs Trout Hatchery are mainly tall sedges, American mannagrass, slender wheatgrass, prairie cordgrass, mat muhly, Baltic rush, and western wheatgrass. Vegetation found on areas away from the creeks include non-irrigated crops, alfalfa, grass, hay, rough fescue, bluebunch wheatgrass, western wheatgrass, and green needlegrass.

Impacts of the Proposed Action: This alternative will remove minor amounts of native vegetation and landscaping to construct the proposed water piping and aeration facilities. New piping will be placed in the upper aeration canal and most of the canal will be covered with fill material. Topsoil will be placed on the covered area of the canal and on other disturbed areas to enhance the success of revegetation efforts. Opportunities for the establishment of noxious weeds exists in areas disturbed by construction. FWP will reestablish a permanent desirable vegetation community in disturbed areas to combat weed infestation.

There would be no reduction in acreage or productivity of any agricultural land as a result of the proposed action.

Impacts of the No Action Alternative: This alternative would have no impact on vegetation within the project area. Noxious weeds would be expected to continue to invade some disturbed areas within or adjacent to the hatchery complex.

a) Threatened and Endangered Plants

Two plant species in Montana, water howellia and the Ute ladies'-tresses orchid, are listed as threatened species by the USFWS. Water howellia is limited to aquatic habitats in northwestern Montana. Ute ladies'-tresses occur along low-elevation, large river floodplains in locations east of the Continental Divide.

Since suitable habitat for both species does not exist in the vicinity of the Big Springs Trout Hatchery, neither the Proposed Action or the No Action Alternative will affect any threatened and endangered plants.

b) Plant Species of Special Concern

The MNHP lists five plants of special concern as occurring within Fergus County. These plants include Roundleaf water-hysopp, Entire-leaf avens, Northern rattlesnake plantain, Hot spring phacelia, and Little Indian bread-root.

Impacts of the Proposed Action: Contacts with the MNHP indicate there are no records of any sensitive plants occurring within the project area. If any rare or sensitive plants exist in the vicinity of the proposed improvements at the Big Springs Trout Hatchery, impacts to these species would be minor and associated with the construction of new piping and aeration facilities and with the reclamation of disturbed areas. No long-term negative impacts or irretrievable losses to rare and sensitive plants are expected.

Impacts of the No Action Alternative: The No Action Alternative would not affect any plant species of special concern.

c) Wetlands

Wetlands are defined as those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands are indicated by the presence of three characteristics, wetland vegetation, hydric soils, and wetland hydrology. Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part of the soil. Wetlands are important due to the functions and values they provide such as flood storage, wildlife habitat, sediment retention, etc.

Although no formal surveys or delineations were completed, areas adjacent to Big Spring, Hansen, and Castle Creeks harbor sporadic vegetation characteristic of wetlands and are saturated or flooded at various times of the year. Hydric soils, another indicator of wetlands, are

likely present but not extensive in the vicinity of these surface waters.

Impacts of the Proposed Action: This alternative is not expected to affect wetlands. The routes selected as locations for new piping have been designed to minimize impacts on the Big Spring Creek and avoid wetlands. Work to construct a new collection bunker will occur in the island pond at the Upper Hatchery.

Work in waters of the U.S. or wetlands will be subject to the conditions of a 404 permit issued by the COE. Due to the nature of work associated with the proposed action, the planned activities are expected to meet the conditions for a "Nationwide" Section 404 permit.

Impacts of the No Action Alternative: The No Action Alternative would not affect any wetlands.

5.3.9 Architectural, Cultural, Archaeological, and Historic Resources

A cultural resource consultant completed an archaeological inventory of the hatchery grounds, an evaluation of structures at the Upper Station, and consulted with the Crow, Northern Cheyenne, Chippewa-Cree, and Fort Belknap Assiniboine and Gros Ventre Tribes during December, 1997. Prior to the field survey, a literature search was conducted by the MONTANA STATE HISTORIC PRESERVATION OFFICE (SHPO) to identify previous cultural resource surveys covering the project area. The search showed previous cultural resource inventories were conducted in the general area in 1992 and again in 1997 prior to other rehabilitation work at the Big Springs Trout Hatchery. The Upper Station of the hatchery, including some individual features and buildings within the complex, and six other cultural sites outside the project area were recorded during these inventories.

The results of the cultural resource survey completed in 1997 for this proposed project are summarized below.

a) Recorded Cultural Sites

The Upper Station of the hatchery was originally examined in a Historic American Engineering Record (HAER) document and was assigned a site number (24FR766) in 1987. The HAER form was prepared by hatchery staff prior to the replacement of the rock walled ponds by concrete raceways. According to the SHPO, 24FR766 was determined eligible for the *National Register of Historic Places (NRHP)* in 1986.

A pedestrian visual survey by the consultant did not identify any prehistoric materials or new sites within the area of the proposed construction.

b) Historic Evaluation of Hatchery Buildings

According to the National Park Service, fifty years is considered "... a general estimate of the time needed to develop historical perspective and to evaluate the significance" of a property.

Since work to develop the Big Springs Trout Hatchery began in 1924, an evaluation of the buildings and features at the hatchery was conducted. All buildings and structures at the Upper Station were recorded, photographed, and thoroughly researched during the evaluation. As part of the work completed for this project, a cultural resource consultant also updated the Montana Cultural Resources Information System Form for site 24FR766.

Although the Upper Station at the hatchery was determined *NRHP*-eligible in 1986, historians concluded the site's integrity has since been compromised by the extensive alteration of original buildings, the removal of rock-walled ponds and other features, and the introduction of more recent structures and features. In January 1998, SHPO agreed that various alterations, maintenance, and repair work "have impacted the values for which the site was initially recognized." For this reason, SHPO also indicated that the FWP may want to have the *NRHP*-eligibility of 24FR766 formally reassessed in the future.

c) Native American Consultations

As indicated earlier, representatives of five Tribes were contacted about potential cultural concerns since the Big Spring area lies within their traditional hunting territories. Consultations (correspondence and follow-up telephone calls) with the Crow, Northern Cheyenne, Chippewa-Cree, and Assiniboine and Gros Ventre Tribes did not identify any cultural concerns related to the proposed improvements to the hatchery.

Impacts of the Proposed Action: The Proposed Action would not directly affect any site or structures of prehistoric, historic, or paleontological importance. The cultural resource work done for this proposed project determined that no Native American cultural concerns exist.

Although site 24FR766 is more than fifty years of age and has been determined eligible for the *NRHP*, modifications to buildings and features at the site in recent years have already impacted the historic integrity of the property. The SHPO indicated that the proposed modifications to protect the hatchery from whirling disease infection will not cause any additional impacts to the integrity of this historic property.

Impacts of the No Action Alternative: The No Action Alternative would not affect any site or structures of prehistoric, historic, or paleontological importance.

5.3.10 Potential Risks and Health Hazards

Fish rearing at the Big Springs Trout Hatchery periodically requires the storage and use of hazardous chemicals.

Impacts of the Proposed Action: Hazardous chemicals used to treat fish are not stored in locations where construction of the proposed action would occur.

The only other known source of hazardous substances for this proposed project are associated with the equipment used for construction and the operation of vehicles owned or operated by

hatchery staff. These are the fuels, lubricants, hydraulic fluids, and related items needed for contractor's vehicles and equipment which could be spilled within the project area. The Contractor for this proposed project would be required to take precautions to minimize the effects of construction operations, and to prevent leakage or spilling of fluids from construction equipment. Contractors would not be allowed to store any fuels or chemicals at the Upper Station to reduce any potential contamination of the spring.

The proposed action would not create any other hazard or potential hazard to humans or domestic livestock.

Impacts of the No Action Alternative: This alternative would have no impacts on hazardous waste sites, generators, or substances.

5.3.11 Aesthetics/Recreation

Big Springs Trout Hatchery is located in a relatively narrow valley surrounded by the rolling foothills leading to the Big Snowy Mountains. The hatchery is primarily visible from surrounding hills and from the Secondary Highway and county roads accessing the facility. An evaluation of hatchery features conducted for this proposed project showed that although the hatchery still occupies its original location, the hatchery's original design, layout, buildings and other features have been altered numerous times in the past. Several other newer buildings and features have also been introduced at the complex changing its appearance.

Presently, FWP data shows that Big Spring Creek supports an annual average of 411 angler days of fishing per stream mile. Nearby lands also receive low to moderate pressure for hunting.

Impacts of the Proposed Action: The proposed action will not alter any scenic vista or create an aesthetically offensive site or effect visible to the public. Since the proposed improvements will occur entirely within existing hatchery grounds and much of the work will occur underground or within existing facilities, no adverse effects on the aesthetic character of the surrounding area are anticipated. Minor structures will be designed to blend with the natural environment and existing character of the hatchery.

Some minor changes in the appearance of the area will occur with the proposed action since new aeration facilities must be added and piping will be installed in much of the upper aeration canal. Buildings to house aeration equipment will be designed and built in a manner consistent with the appearance of other hatchery facilities. Since the diameter of piping will exceed the depth of the canal, a slight berm will be created when fill is placed over the pipe and graded to match the ground surface elevation of adjoining areas. The filled-in canal area will be seeded with desirable vegetation.

The proposed action would remove all man made structures and return the open pond below the Big Springs collection dome to a natural stream setting.

The proposed action would not change the availability or quality of existing recreational

The proposed action would not change the availability or quality of existing recreational opportunities in the project area.

Impacts of the No Action Alternative: This alternative would have no impacts on the aesthetics or recreational use of lands in the project area.

5.3.12 Secondary and Cumulative Impacts

Secondary (or indirect) effects are those that are caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable. Secondary impacts are generally induced by the initial action and comprise a wide variety of effects such as, changes in land use, water quality, economic conditions, or population density.

The most notable secondary impacts of the proposed action are positive and include:

- continued viability and service of Big Springs Trout Hatchery to Montana's fish stocking program; and
- the provision of a hatchery water supply safe from infestation by whirling disease.

These impacts have been described earlier in this document.

Cumulative impacts are those effects which result from the incremental consequences of an action when added to other past and reasonably foreseeable future actions regardless of what agency (federal or non-federal) undertakes such actions. The cumulative effects from this proposed hatchery improvements project are negligible. This conclusion was reached because the timing of construction activities for the hatchery project will not coincide with other known projects planned, under construction or recently completed near the Big Springs Trout Hatchery.

The only known projects recently completed, under construction, or planned in the vicinity of the Big Springs Trout Hatchery are:

- Big Spring-North - This MONTANA DEPARTMENT OF TRANSPORTATION (MDT) project improved about two miles of Secondary Highway 466 northwest of the Big Springs Trout Hatchery. The highway work was completed in 1996.
- Brewery Flats Channel Restoration Project - This stream restoration project is being implemented by FWP on Big Spring Creek southeast of the City of Lewistown. The project is currently experiencing a delay.
- Big Spring Creek - NW of Lewistown - An MDT bridge replacement over Big Spring Creek on Secondary Highway 237 near Lewistown is planned for construction in 1998.

5.3.13 Construction Impacts

Impacts of the Proposed Action: There are several impacts associated with the construction of

the proposed improvements at the hatchery. These construction-related impacts are described below:

- Noise and Vibration The operation of heavy machinery like earth moving equipment, power tools, and trucks would create periods of undesirable noise and vibration in the project area. Construction noise could be perceived as being louder than it really is due to low background noise levels within the project area.
- Dust The operation of heavy equipment on exposed soil areas could produce dust within the work zone.
- Water Quality Runoff from disturbed surface areas has the potential to enter the Big Spring Creek and other surface waters and adversely affect water quality. Petroleum products and other materials could be spilled during the operation and maintenance of equipment needed to construct the project.
- Visual Stockpiles of piping and materials and equipment needed for the construction of the hatchery improvements may cause short-term adverse impacts for residents and others passing through the area.
- Traffic No disruptions to traffic on Secondary Highway 466 or other local roads near the hatchery are anticipated.

Construction impacts will be mitigated through the implementation and enforcement of control measures during construction. Such measures would include:

- The contractor will be subject to all state and local laws to minimize construction noise by having mufflers on all equipment.
- If necessary, water or another approved dust suppressant will be used to control the generation of dust by construction activities.
- Erosion control measures will be employed to prevent sediments from reaching the Big Spring Creek and other surface waters near the hatchery.
- Temporary or permanent seeding and mulching will be used to control erosion of disturbed areas.
- The contractor will be required to have a plan for implementing appropriate measures in the event of an accidental spill.

Impacts of the No Action Alternative: The only construction impacts associated with this alternative would be related to the completion of minor maintenance activities within the upper

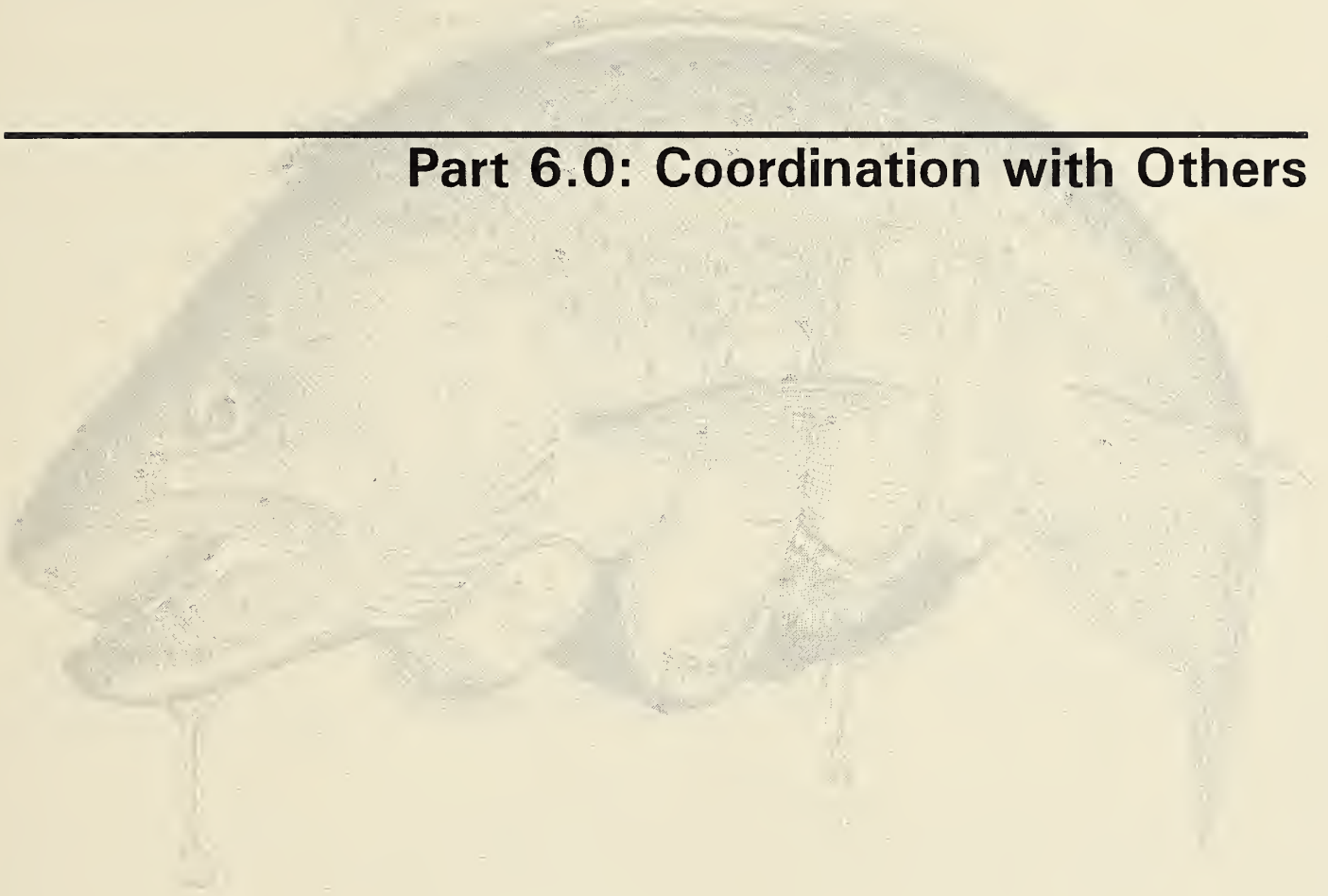
and lower hatchery complexes.

5.3.14 Permits Required

The No Action Alternative would not require any permits. However, the proposed action will require the following permits to be obtained prior to any relevant disturbances:

- **124SPA Permit** This proposed project will require a **124SPA** Stream Protection Permit from FWP for any work in or on the banks of Big Spring Creek.
- **MPDES Permit** If construction disturbs more than 5 acres or disturbs more than 1 acre on a site located within 100 feet of state waters, a General Discharge Permit for Storm Water Associated With Construction Activity under the Montana Pollutant Discharge Elimination System (MPDES) will be required by the MDEQ. As a condition for receiving this permit, a storm water erosion control plan listing measures to be employed during construction to control erosion and sediment transport must be submitted and approved.
- **Section 404 Permit** A *Clean Water Act* (33 U.S.C. 1251 - 1376) - *Section 404* permit from the COE may be required for excavating or placing fill material into surface waters or special aquatic sites. The COE will be consulted to determine if the proposed project qualifies for a "Nationwide" 404 permit or requires an "Individual" 404 permit.
- **Floodplain Permit** A floodplain development permit from the Floodplain Manager for Fergus County will be needed for any construction proposed within the 100-year floodplain of Big Spring Creek.
- **Other Permits** The supplier of any crushed rock material needed for construction must have an air quality permit from the MDEQ. Open burning (if required) must be accomplished in accordance with state or county regulations for such action.

Part 6.0: Coordination with Others



PART 6.0. Coordination with Others

6.1 Agency Consultation

Various governmental agencies and others with potential interests were notified by letter of FWP's intent to renovate the Big Springs Trout Hatchery during December, 1997 and January, 1998. These letters provided agencies with a general description of the scope of work for the proposed project and in some cases, solicited information that could be used in the development of the environmental document. The following agencies and parties received notifications about this project:

- U.S. Environmental Protection Agency, Montana Office
- U.S. Department of the Army, Corps of Engineers
- Montana Department of Fish, Wildlife & Parks, Regional Supervisor (Region 4)
- Montana State Historic Preservation Office
- Montana Department of Environmental Quality, (Water Quality Division)
- Fergus County Board of Commissioners
- City-County Planning Board
- City of Lewistown

Responses were not received from each of these agencies. Copies of correspondence resulting from this initial notification is included in APPENDIX A.

Requests for information and other contacts were also made with natural resource agencies and others with interests in the proposed action during the preparation of the Environmental Assessment. Those contacted for information relevant to the environmental document or supporting resource reports included:

- Natural Resource Information System, Montana Natural Heritage Program
- John Pretty On Top, Crow Tribe Cultural and Historical Commission
- Joe Medicine Crow, Crow Tribal Historian and Archaeologist
- Bill Tallbull, Northern Cheyenne Culture Committee

6.2 Public Review and Opportunities for Comment

The public has previously been afforded several opportunities to comment on the proposed improvements at the Big Springs Trout Hatchery. To date, information about the project was presented and opportunities for public comment were provided by:

- articles in the *Lewistown News-Argus* and letters to the Editor;
- open public meetings with the City of Lewistown Council;
- FWP's Regional meetings;
- meetings with the local Chamber of Commerce, the American Fisheries Society; and
- visitor contacts at the hatchery.

Preliminary plans were reviewed in 1996 by the Lewistown City Council, the Lewistown Public Works Department, and the Lewistown Wellhead Protection Committee.

Public review of this Environmental Assessment will be accomplished through the distribution of the document and through the publication of a news release or legal notice announcing its availability, summarizing its content, and soliciting public comment. Additionally, weekly informational tours discussing the proposed improvements will be conducted at the hatchery during the public review period for the environmental document. Written comments will be received on this document for thirty (30) days following its distribution.

Unless comments received on this Environmental Assessment warrant further investigation, no additional public involvement is planned. Public and agency comments on this document will be evaluated to determine whether significant impacts will occur from the proposed action; if further consideration of the impacts discussed herein is needed; and if new issues have arisen that need to be addressed in the Environmental Assessment. Appropriate revisions will be made to the text of the document.

If no significant impacts are identified, FWP will revise the Environmental Assessment and issue a Decision Notice for the project containing substantive comments received and FWP responses. The Decision Notice will also identify subsequent actions taken to implement the proposed action. The Notice will then be made available to Federal, State, and local government agencies and others with interests in the project.

If significant impacts are found, FWP is obligated to prepare an Environmental Impact Statement before proceeding with the proposed action.

6.3 Circulation List for Environmental Assessment

The following agencies, groups, and individuals are being sent a copy of this Environmental Assessment:

AGENCIES AND OTHERS WITH INTERESTS IN PROJECT

STATE AGENCIES

GOVERNOR'S OFFICE
Room 204, State Capitol
P.O. Box 200801
Helena, MT 59620-0801
Attn: Julie Lapeyre

ENVIRONMENTAL QUALITY COUNCIL
Capitol Building, Room 106
P.O. Box 201704
Helena, MT 59620-1704

MONTANA DEPARTMENT OF
ENVIRONMENTAL QUALITY
P.O. Box 200901
Helena, Montana 59620-0901

MONTANA HISTORICAL SOCIETY
State Historic Preservation Office
P.O. Box 201202
Helena, MT 59620-1202

**MONTANA DEPARTMENT OF FISH, WILDLIFE
& PARKS**

Director's Office
Parks Division
Fisheries Division
Wildlife Division
Lands Section
Resource Assessment
FWP Commissioners
FWP Regional Offices
Big Springs Trout Hatchery

**MONTANA DEPARTMENT OF NATURAL
RESOURCES AND CONSERVATION**

Water Resources Division
613 NE Main, Suite E
Lewistown, MT 59457
Attn: Craig Roberts/Andy Morley

**MONTANA DEPARTMENT OF NATURAL
RESOURCES & CONSERVATION**

P.O. Box 201601
Helena, MT 59620-1601
Attn: Bud Clinch

STATE LIBRARY

Collection Management Librarian
1515 East Sixth Avenue
P.O. Box 201800
Helena, MT 59620-1800

LOCAL AGENCIES

FERGUS COUNTY COMMISSIONERS

Fergus County Courthouse
Lewistown, MT 59457

CITY OF LEWISTOWN

Brad Parrish, Chairman of Commission
City Complex
305 Watson
Lewistown, MT 59457

LEWISTOWN/ FERGUS COUNTY PLANNING

Fergus County Courthouse
Lewistown, MT 59457
Attn: Belinda Waters

FERGUS COUNTY CONSERVATION DISTRICT

211 East McKinley, Suite 3
Lewistown, MT 59457

LEWISTOWN PUBLIC WORKS

305 Watson
Lewistown, MT 59457
Attn: Bill Shaw

Senator John R. Hertel

RR 1 Box 30
Moore, MT 59464-9703

Representative Larry Hal Grinde

RR 3
Lewistown, MT 59457-9803

Representative William G. Thomas

HC 81 Box 7
Hobson, MT 59452-9701

SPECIAL INTERESTS

**MONTANA ENVIRONMENTAL INFORMATION
CENTER**

P.O. Box 1184
Helena, MT 59624
Attn: James Jensen

MONTANA AUDUBON COUNCIL

P.O. Box 595
Helena, MT 59624
Attn: Janet Ellis

MONTANA WILDLIFE FEDERATION

P.O. Box 1175
Helena, MT 59624

MONTANA STATE PARKS ASSOCIATION

P.O. Box 699
Billings, MT 59103

George Ochenski

P.O. Box 689
Helena, MT 59624

MONTANA RIVER ACTION NETWORK

P.O. Box 383
Helena, MT 59624

MONTANA COUNCIL TROUT UNLIMITED

P.O. Box 7186
Missoula, MT 59807-7186

LEWISTOWN TROUT UNLIMITED

Route 2, Box 2064
Lewistown, MT 59457
Attn: Jim Barnum

LEWISTOWN AREA CHAMBER OF
COMMERCE
P.O. Box 818
Lewistown, MT 59457
Attn: J. R. Strand

CARNEGIE PUBLIC LIBRARY
701 W. Main
Lewistown, MT 59457

Cliff Foreman
Spring Creek Road
Lewistown, MT 59457

Trout Haven
Spring Creek Road
Lewistown, MT 59457

List of Preparers

List of Preparers

The following parties are responsible for the preparation and content of this document:

Gary Bertellotti, Chief, Hatcheries Bureau
Fisheries Division
Montana Department of Fish, Wildlife & Parks
1420 East Sixth Avenue
P.O. Box 200701
Helena, MT 59620-0701
(406) 444-2447

Marvin Holtz, Project Coordinator
Architecture and Engineering Division
Montana Department of Administration
1520 East Sixth Avenue
P.O. Box 200103
Helena, MT 59620-0103
(406) 444-3333

Other notable FWP contributors include Jack Boyce, Manager of the Big Springs Trout Hatchery and Rich Misplon, Design and Construction Bureau (Helena).

The Montana Department of Fish Wildlife & Parks was assisted in the writing, coordination, and the development of supporting information for this document by:

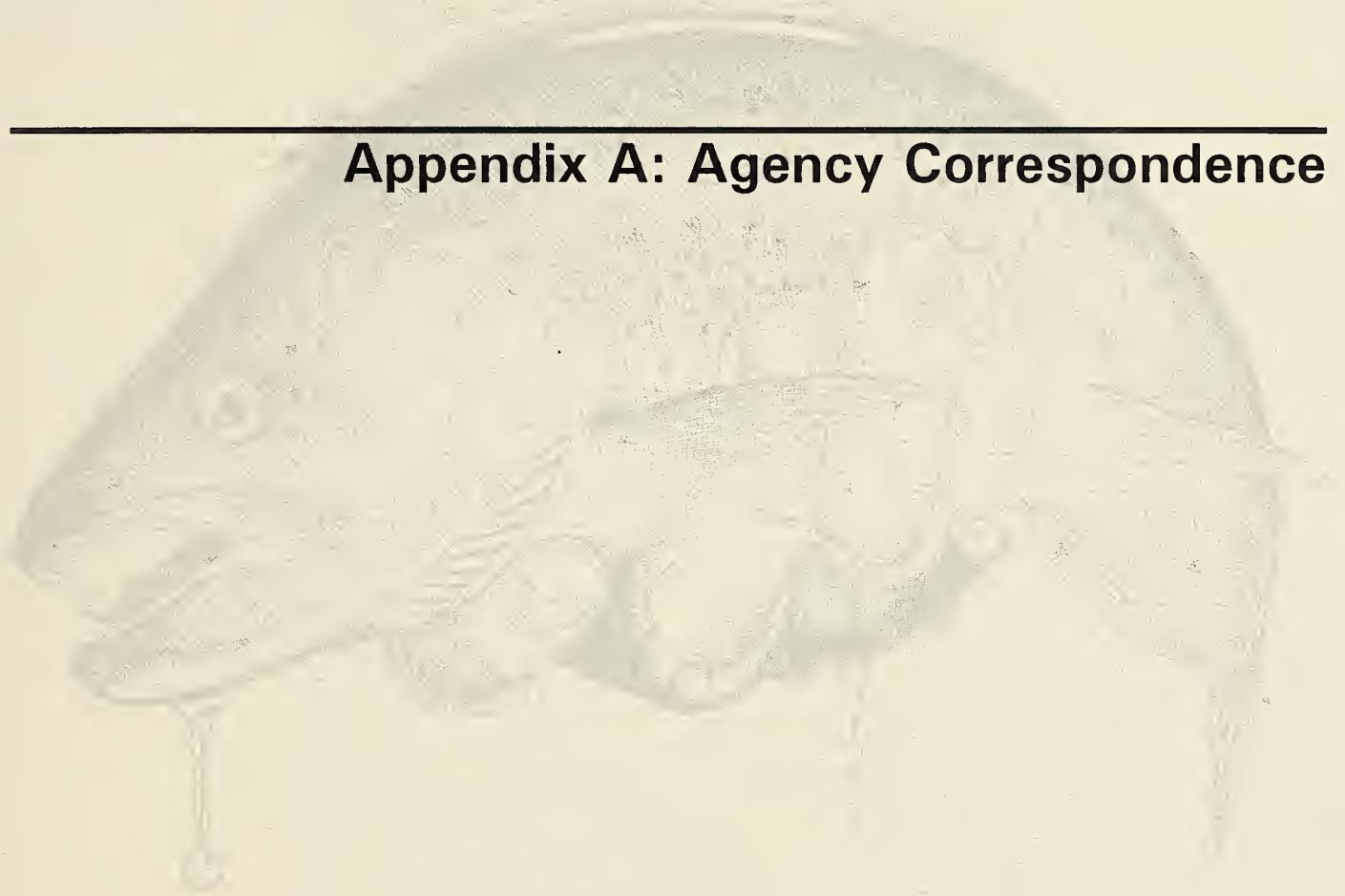
Robert Peccia & Associates, Inc.

Consulting Civil Engineers, Planners and Designers
825 Custer Avenue
P.O. Box 5653
Helena, Montana 59604
(406) 447-5000

Ethnoscience

Architectural and Cultural Resource Evaluations, Native American Consultations
711 Rimrock
Billings, Montana 59103
(406) 252-7945

Appendix A: Agency Correspondence





December 23, 1997

AGENCY

Address

City, State Zip Code

Attn:

Subject: Water Supply Protection
Big Springs Trout Hatchery; Lewistown, MT
Montana A/E # 97-35-01

CIVIL,

TRANSPORTATION,

ENVIRONMENTAL,

ENGINEERS

Our firm was retained by the Montana Department of Administration's Architecture and Engineering Division to help the Department of Fish, Wildlife & Parks (FWP) protect the water supply at the Big Springs Trout Hatchery from whirling disease infection. The Big Springs Trout Hatchery is located about 6.0 miles southeast of Lewistown in Fergus County. The facility is the FWP's largest trout hatchery and its operation is critical for meeting current and future fish-rearing needs in the state. The attached map shows the location of the hatchery.

Since fish from hatcheries are planted in many locations throughout Montana, it is imperative that the State's hatchery system remain free of whirling disease. After the detection of whirling disease in the Madison River in 1994, FWP began inventorying the State's hatcheries for susceptibility to infection by the disease. No whirling disease has yet been found at the hatcheries, but hatchery water sources which are open and have natural stream bottoms are highly susceptible to becoming infected by the disease. Stream bottoms offer habitat for the tubifex worm, a host to the whirling disease organism, and open waters provide many opportunities for humans, animals, and birds to unknowingly transport the tiny organism from other infected waters. The tubifex worm has been identified in the water source and channels supplying the Big Springs Trout Hatchery which greatly increases the risk of whirling disease infection at the facility.

In an effort to limit its vulnerability to whirling disease, FWP proposes to implement the following improvements at the Big Springs Trout Hatchery:

- Bypass the open pond below Big Spring;
- Bypass the open creek supplying the Upper Station at the hatchery;
- Cover Lehman Spring or collect additional water from Big Spring;
- Enclose the lower canal by installing pipes for the water supply;
- Enclose the aeration canal by installing water pipes for the water supply;
- Install covers and water-tight pipe penetrations on raceway head troughs;
- Replace the cover on Middle Big Spring;
- Convert the abandoned lower canal into effluent settling basins;
- Install a rock wall around the bypass pond at the Lower Station.

A figure showing the location of these proposed improvements is attached for your reference. Preliminary engineering and related work for this project is expected to be completed in March, 1998. The project is expected to be bid in July, 1998 with construction beginning in the fall of 1998 and ending by the fall of 1999.

We are in the process of assembling information that can be used to prepare an Environmental Assessment (EA) examining the impacts of this proposed project at the Big Springs Trout Hatchery. To help us with this task, we request any comments that you or your agency may have about important issues or potential impacts that should be addressed during the development of improvement plans for the hatchery. Your comments, concerns, and/or recommendations will be considered in the EA and your response to this letter will be published in the document.

To facilitate our client's schedule, we would like to have your comments before **JANUARY 16, 1998**. If you have questions concerning this project, please contact Alden Beard, P.E. (our project manager) or me at 447-5000 for assistance.

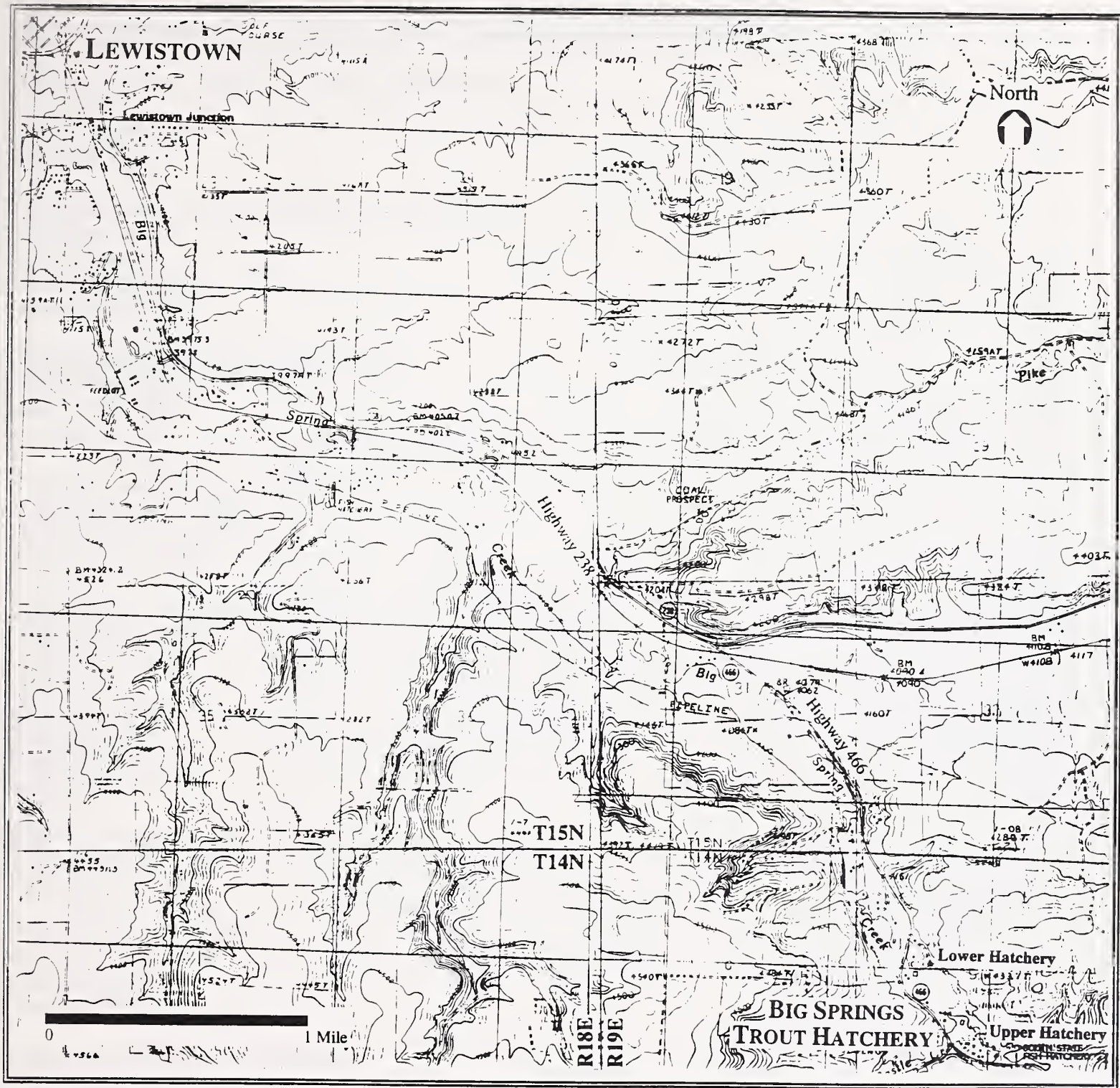
Sincerely,
ROBERT PECCIA & ASSOCIATES, Inc.

Daniel M. Norderud, AICP
Environmental Planner

Enclosures

cc: Marvin Holtz, A/E Division, Project Manager
Rich Misplon, FWP Design & Construction Bureau

File Name: F:\WATER\BIGSPRNG\ENVIRNMT\CORRESP\NOTICE.LTR



Project Location Map

Water Supply Protection for
Big Springs Trout Hatchery
Lewistown, MT
Montana A/E Project #97-35-01

This notification letter was sent to the following agencies, groups, and individuals.

Montana Department of Natural Resources and Conservation
613 NE Main
Lewistown, MT 59457
Attn: Craig Roberts

Montana Department of Natural Resources and Conservation
Water Reservations
613 NE Main
Lewistown, MT 59457
Attn: Sam Rodriquez

Montana Department of Fish, Wildlife & Parks
624 NE Washington
Lewistown, MT 59457
Attn: Anne Tews

U.S. Environmental Protection Agency
Region VIII, Montana Office
301 South Park, Drawer 10096
Helena, Montana 59626

Fergus County Commissioners
Fergus County Courthouse
Lewistown, MT 59457

City of Lewistown
Dick Ellestad, Mayor
City Complex
Lewistown, MT 59457

Fergus County Conservation District
211 East McKinley, Suite 3
Lewistown, MT 59457

Lewistown Trout Unlimited
Route 2, Box 2064
Lewistown, MT 59457
Attn: Jim Barnum

Lewistown Area Chamber of Commerce
P.O. Box 818
Lewistown, MT 59457
Attn: J. R. Strand

Don Pfau
Sports Inc.
333 Second Avenue North
Lewistown, MT 59457

A similar letter requesting specific information was sent to the following agencies and individuals. 

Montana Department of Environmental Quality
P.O. Box 200901
Helena, Montana 59620-0901
Attn: Permitting and Compliance Division

Montana State Historic Preservation Office
1410 Eighth Avenue
P.O. Box 201202
Helena, MT 59620-1202

Montana Department of Fish, Wildlife & Parks
Headquarters Region 4
4600 Giant Springs Road
P.O. Box 6610
Great Falls, MT 59406

Montana Department of Fish, Wildlife & Parks
1400 South 19th Avenue
Bozeman, MT 59715
Attn: Arnold Dood

U.S. Department of the Army
Corps of Engineers
301 South Park, Drawer 10014
Helena, MT 59626-0014

Lewistown/Fergus County Planning
Fergus County Courthouse
Lewistown, MT 59457
Attn: Belinda Waters



Montana Historical Society

Historic Preservation Office

1410 8th Avenue • PO Box 201202 • Helena, MT 59620-1202 • (406) 444-7715 • FAX (406) 444-6575

December 31, 1997

Daniel M. Norderud
Robert Peccia & Associates, Inc.
PO Box 5653
825 Custer Ave
Helena, MT 59604

243-5525

JAN - 5 1998

ROBERT PECCIA
& ASSOCIATES, INC.

RE: Cultural Resource File Search - Big Springs Trout Hatchery Water Supply Protection, T14N, R19E, Sec. 5; FR Co.

Dear Mr. Norderud:

I have conducted a cultural resource file search for the above cited project area. There are currently four previously recorded historic sites located in the area. The site 24FR766 is the Big Springs Fish Hatchery. The other three sites are historic buildings associated with the Fish Hatchery. They are 24FR774, 24FR775, and 24FR826. If you wish to obtain further information on these sites you may contact the University of Montana Archaeological Records Office at (406)-243-5525. In addition to the sites there has been one previous archaeological survey in the area. A Cultural Resource Inventory- Big Springs North was done by Dale Gray for the Montana Department of Transportation in June of 1992. If you wish to receive a copy of this report you may contact me at the number listed below.

We feel that based on the previous inventory that there is a low likelihood of unknown or unrecorded cultural properties to be present. Our primary concern in this case would be with the affect this undertaking may have on historic properties located at the hatchery. We would recommend that a reconnaissance survey be performed if it hasn't already been done. This survey should determine whether or not this project will have any impact on the cultural properties located at the project area. Thank you for consulting with us.

If you have any question please feel free to contact me at (406)-444-7767 or by e-mail at pmelton@mt.gov.

Sincerely,

Phillip Melton
Cultural Records Manager

File: FWP/1997

LEWISTOWN/FERGUS COUNTY PLANNING BOARDS

January 6, 1998

Daniel Norderud, AICP
Environmental Planner
Peccia & Associates
P.O. Box 5653
Helena, MT 59604

Dear Mr. Norderud:

I have reviewed your letter and accompanying documents regarding the Water Supply Protection Plan for Big Springs Trout Hatchery.

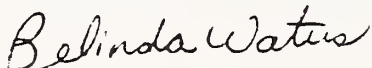
I am not aware, at this time, of any planned or proposed developments in the vicinity of the Big Springs Trout Hatchery. However, you should be aware that over the past few years, numerous minor subdivisions have been developed in this general area.

Fergus County has adopted Floodplain Regulations and does administer those regulations. I have enclosed the following:

1. a Floodplain Development Permit Application Form;
2. a copy of Fergus County's Floodplain Regulations; and
3. a copy of the "Flood Hazard Analysis" for this area that clearly shows that some of the proposed improvements will involve the floodplain.

Please call me if you have any questions or need additional information.

Sincerely,



Belinda Waters
Floodplain Administrator

Enclosures

FLOODPLAIN DEVELOPMENT PERMIT

A permit must be issued by the Floodplain Administrator before the development can begin.

THIS SECTION TO BE COMPLETED BY THE APPLICANT

Name of Applicant _____ Date _____

Address _____

Phone _____

Location of Proposed Development _____

Description of Development [check box or boxes which best describe development]

☐ Residential	☐ Subdivision	☐ Bridge	☐ New Construction
☐ Mobile Home	☐ Mobile Home Park	☐ Culvert	☐ Addition
☐ Commercial	☐ Watercourse Alteration	☐ Fill	☐ Improvement
☐ Other (explain) _____			

Signature of Applicant

ATTACH TO THE APPLICATION THE FOLLOWING INFORMATION

Plans in duplicate drawn to scale showing:

- A) Dimensions of the development site
- B) Elevations of the development site
- C) Proposed structures: buildings, mobile homes, bridges, culverts, etc. (include existing structures where appropriate)
- D) Placement, number, and type of anchors for mobile homes
- E) Utility connection locations: sewer, water, gas, and electric
- F) Bridge and culvert plans must include hydraulic computations by a registered engineer
- G) Fill location & dimensions
- H) Storage of materials
- I) Drainage facilities
- J) Water course alterations including plan drawings, cross sections, and hydraulic computations.

Be sure to include the following:

- 1) Mean Sea Level (MSL) elevation of the lowest floor (including basement) of proposed structure(s), or
- 2) MSL elevation to which structure(s) is to be floodproofed.
[Applicants may be required to furnish additional information.]

☒ A permit fee of \$ 50 must accompany this application. ☐ No fee is required.

Send this application and all correspondence concerning this permit to:

Name & Title Belinda Waters Floodplain Administration

Address 712 W. Main
Lewistown, MT 59457 Phone 538-9046



MONTANA NATURAL HERITAGE PROGRAM

1515 East Sixth Avenue
Helena, Montana 59620
(406) 444-3009

January 7, 1998

Daniel Norderud, AICP
Robert Peccia & Associates
PO Box 5653
Helena, MT 59604

Dear Mr. Norderud:

This is in response to your request for information on species of special concern in the vicinity of the T14N R19E, near Big Springs Trout Hatchery. A search of our database found no records of species of special concern occurring in the vicinity of this area.

Please keep in mind, however, the results of a data search by the Montana Natural Heritage Program are not intended as a final statement on sensitive species within a given area, or as a substitute for on-site surveys which may be required for environmental assessments or other work.

If I can be of further assistance, please don't hesitate to contact me at 444-0915 or via e-mail at schadde@nris.mt.gov.

Sincerely,


Scott Lee-Chadde



Montana Fish, Wildlife & Parks

Region Three - Serving Southwestern Montana

1400 South 19th Avenue
Bozeman, MT 59718

January 9, 1998

Mr. Daniel M. Norderud
Environmental Planner
P.O. Box 5653
825 Custer Avenue
Helena MT 59604

Dear Mr. Norderud:

The two listed species which have the potential of occurring in the Big Springs Trout Hatchery project area are the bald eagle and peregrine falcon. For a complete list of sensitive species or species of special interest or concern, I suggest you contact the Natural Heritage Program in Helena, 1515 E Sixth Avenue, PO Box 201800, Helena, MT 59620.

The project as described should not negatively impact either peregrines or bald eagles. If you need further information, please contact me.

Sincerely,

A handwritten signature in cursive script that reads "Arnold Dood". There is a small circular mark above the "d" in "Dood".

Arnold Dood
Endangered Species Coordinator

AD/mkm

RECEIVED

JAN 19 1998

MONTANA STATE HISTORIC PRESERVATION OFFICE

NHPA Section 106 \ Other Consultation

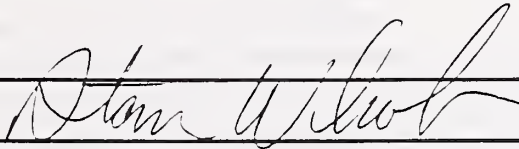
ROBERT PECCHIA

~~ASSOCIATES~~

This form constitutes a record of your consultation with the Montana Historic Preservation Office on this project and is the official SHPO reply. The dates of SHPO actions appear in the appropriate boxes.

Please Route This Form To:		Daniel Norderud Peccia & Assoc. POB 5653 Helena, MT 59604			
Your Agency Requested Consultation with the Montana State Historic Preservation Officer (SHPO) on this Project under this Law or Regulation:					
				Section 106	
PROJECT NUMBER	97-35-01	AGENCY	FWP	OTHER Agency	
PROJECT NAME and Other Descriptions	Big Spring Trout Hatchery Lewistown	Dates and Separate Requests to SHPO on This Project	01/12/98	Stan	
THIS FORM documents		1	individual actions.		
Memo(s) to Sender	We have reviewed the report concerning 24FR766 Big Spring Hatchery. The report does not include the fact that the hatchery was previously determined eligible on 09/16/86. Subsequent modifications have impacted the values for which the site was recognized. The proposed whirling disease modifications would have no additional impacts. Should the FWP wish the eligibility of the site to be formally reassessed, they should consult with SHPO Historian Josef Warhank. Thank you.				
DETERMINATION OF ELIGIBILITY The SHPO Has Considered Whether, per Your Request, Sites Either Meet or Do Not Meet the Criteria of the National Register of Historic Places. The Finding of the SHPO Is as Follows:		Sites which Meet National Register Criteria		Sites Not Meeting National Register Criteria	
Criterion A Findings	Criterion B Findings	Criterion C Findings	Criterion D Findings		
DETERMINATIONS OF EFFECT The shpo has considered whether this undertaking will have an affect on significant historic properties. The finding of the shpo is as follows:		No Eligible or Listed Properties Are Within the Area of	The Project Will Have NO EFFECT on These		
Descriptions of Effects on Eligible Property Using 36 CFR 800.9			Potential Effect		Eligible Properties
					XXXXX
		The Effect on These Properties Is:			
		Adverse			
		Not Adverse.			
Other Comments:					

January 16, 1998

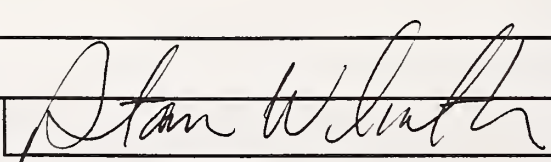
Reviewer Signatures		01/16/98	:Dates
	Stan Wilmoth. Ph.D. HPO		

RECEIVED

APR 27 1998

MONTANA STATE HISTORIC PRESERVATION OFFICE
NHPA Section 106 \ Other Consultation

This form constitutes a record of your consultation with the Montana Historic Preservation Officer on a particular project and is the official SHPO reply. The dates of SHPO actions appear in the appropriate boxes. **ROBERT PECCIA & ASSOCIATES**

Please Route This Form To:		Robert Peccia & Assoc. POB 5653 Helena, MT 59604			
Your Agency Requested Consultation with the Montana State Historic Preservation Officer					
(SHPO) on this Project under this Law or Regulation:				Section 106	
PROJECT NUMBER		AGENCY	FWP	OTHER Agency	
PROJECT NAME and Other Descriptions	Big Spring Trout Hatchery Crow Trial Consultation	Dates and Separate Requests to SHPO on This Project	04/17/98	Stan	
THIS FORM documents		1	individual actions.		
Memo(s) to Sender	Dear Mr Norderud: Thank you for providing us with additional information regarding possible Native American consultation for the Big Springs project. This additional information does respond to our earlier comments and we have no further concerns with regards to that matter. Thank you again.				
DETERMINATION OF ELIGIBILITY The SHPO Has Considered Whether, per Your Request, Sites Either Meet or Do Not Meet the Criteria of the National Register of Historic Places. The Finding of the SHPO is as Follows:		Sites which Meet National Register Criteria		Sites Not Meeting National Register Criteria	
Criterion A Findings	Criterion B Findings	Criterion C Findings	Criterion D Findings		
DETERMINATIONS OF EFFECT The shpo has considered whether this undertaking will have an affect on significant historic properties. The finding of the shpo is as follows:		No Eligible or Listed Properties Are Within the Area of	The Project Will Have NO EFFECT on These		
		Potential Effect		Eligible Properties	
Descriptions of Effects on Eligible Property Using 36 CFR 800.9			The Effect on These Properties Is:		
			Adverse		
			Not Adverse.		
Other Comments:					
Reviewer Signatures				04/24/98 :Dates	

